CONTENTS

1. INFORMATION

2. MAINTENANCE

3. ENGINE REMOVAL AND INSTALLATION

4. ENGINE FUEL SYSTEM

5. ENGINE LUBRICATION AND COOLING SYSTEM

6. ENGINE COMBUSTION SYSTEM

7. TRANSMISSION SYSTEM

8. STEERING SYSTEM

9. FRONT WHEEL SYSTEM

10. REAR WHEEL SYSTEM

11. FENDERS AND EXHAUST PIPE

12. ELECTRICAL SYSTEM

13. TROUBLE SHOOTING

1. INFORMATION

1.1 SAFTY	1.4 SERIAL NUMBER
1.2 NOTES	1.5 TORQUE VALVE
1.3 SPECIFICATION	

1.1 SAFETY

- **Gasoline is extremely flammable and is explosive under certain condition.**
  Do not smoke or allow sparks or flames in your work area.
- **Never run the engine in a closed area. The exhaust contains poisonous carbon monoxide gas that may cause loss of consciousness and lead to death.**
- **The battery electrolyte contains sulfuric acid. Protect your eyes, skin and clothing. If you contact it, flush thoroughly with water and call a doctor if electrolyte gets in your eyes.**

1.2 NOTES

All information, illustrations, directions and specifications included in this publication are base on the latest product information available at the time of approval for printing.
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1.3 SPECIFICATION

	RXL50	RXL70	RXL90	RXL90R	RXL50M
ENGINE					
TYPE	AIR-COOLING TWO STROKE				
DISPLACEMENT	49.3 cc	68.0 cc	82.5 cc	82.5 cc	49.3
BORE & STROKE	40.0*39.2 mm	47.0*39.2 mm	50.0*42.0 mm	50.0*42.0 mm	40.0*39.2 mm
COMPRESSION	9.2：1	8.3：1	7.9：1	7.9：1	9.2：1
MAXIMUN TORQUE	5.2 N-m @ 7000rpm	6.3 N-m @ 6000rpm	7.0 N-m @ 7500rpm	7.0 N-m @ 7500rpm	5.2 N-m @ 7000rpm
CARBURETOR	MIKUNI VM16 (for other country) / SW 18 mm-Manual Choke (for America)				
IGNITION	CAPACITOR DISCHARGE				
STARTING	ELECTRIC/KICK START				
LUBRICATION	AUTO OIL INJECTION				
OIL CAPACITY	1.0 LITER				
TRANSMISSION	AUTOMATIC (C.V.T. V-Belt)				
CHASSIS					
OVERALL LENGTH	1470mm (57.9")	1470mm (57.9")	1500mm (59.0")	1500mm (59.0")	1430mm (56.3")
OVERALL WIDTH	850mm (33.5")	850mm (33.5")	850mm (33.5")	850mm (33.5")	820mm (32.3")
OVERALL HEIGHT	830mm (32.7")	830mm (32.7")	900mm (35.4")	900mm (35.4")	800mm (31.5")
SEAT HEIGHT	650mm (25.5")	650mm (25.5")	670mm (26.3")	670mm (26.3")	650mm (25.5")
WHEEL BASE	930mm (36.1")	930mm (36.1")	930mm (36.1")	930mm (36.1")	930mm (36.1")
GROUND CLEARANCE	110mm (4.3")	95mm (3.7")	120mm (4.7")	130mm (5.1")	110mm (4.3")
DRY WEIGHT	108kg	108 kg	113 kg	113 kg	108kg
FUEL TANK CAPACITY	4.5 LITERS				
SUSPENSION					
FRONT	DUAL A-ARM				
REAR	SWING ARM				
BRAKES					
FRONT	DUAL MECHANICAL DRUM				N/A
REAR	HYDRAULIC DISC				
TIRES					
FRONT	16" *8"-7	16" *8"-7	18" *7"-8	18" *7"-8	145/70-6
REAR	16" *8"-7	16" *8"-7	18" *9"-8	18" *9"-8	145/70-6
COLORING	Red /Blue /Yellow /Black				

Specifications subject to change without notice.

1.4 SERIAL NUMBER

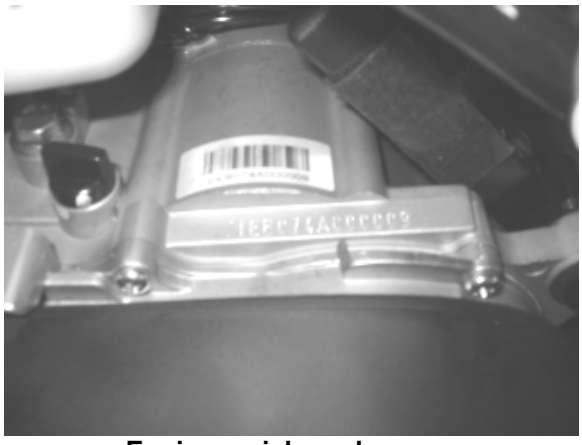
For this ATV serial; the number of frame and engine are the same position, just like the picture below;

The frame serial number is stamped on the front of the frame.

The engine serial number is stamped on the left side of the crankcase.

Frame serial number

Engine serial number
For RXL 50/70/90/RXL50M



Engine serial number
For RXL 90R

1.5 TORQUE VALUES

For this ATV serial; the torque values of frame and engine are the same, just like the picture below;

ENGINE

● Cylinder head nut	28-30 N.m (20.7-22.1 lbf.ft)
● Spark plug	12-19 N.m (8.9-14.0 lbf.ft)
● Cylinder head bolt	20-30 N.m (14.8-22.1 lbf.ft)
● Alternator bolt	8-12 N.m (5.9- 8.9 lbf.ft)

FRAME

● Handlebar upper holder bolt	24-30 N.m (17.7-22.1 lbf.ft)
● Steering shaft nut	50-60 N.m (36.9-44.3 lbf.ft)
● Steering shaft bushing holder nut	24-30 N.m (17.7-22.1 lbf.ft)
● Wheel rim bolt	18-25 N.m (13.3-18.4 lbf.ft)
● Tie rod lock nut	35-43 N.m (25.8-31.7 lbf.ft)
● King pin nut	30-40 N.m (22.1-29.5 lbf.ft)
● Handlebar lower holder nut	40-48 N.m (29.5-35.4 lbf.ft)
● Front wheel bolt	24-30 N.m (17.7-22.1 lbf.ft)
● Front axle nut	55-65 N.m (40.6-47.9 lbf.ft)
● Front brake arm nut	4-7 N.m (3.0- 5.2 lbf.ft)
● Rear brake arm nut	7-12 N.m (5.2- 8.9 lbf.ft)
● Rear axle nut	60-80 N.m (44.3-59.0 lbf.ft)
● Rear wheel bolt	24-30 N.m (17.7-22.1 lbf.ft)
● Exhaust muffler mounting bolt	30-35 N.m (22.1-25.8 lbf.ft)
● Engine hanger bolt	24-30 N.m (17.7-22.1 lbf.ft)

2. MAINTENANCE

2.1 MAINTENANCE DATA	2.8 IDLE SPEED
2.2 MAINTENANCE SCHEDULE	2.9 DRIVE CHAIN
2.3 FUEL TUBE	2.10 BRAKE SYSTEM
2.4 THROTTLE OPERATION	2.11 WHEELS AND TIRES
2.5 THROTTLE CABLE ADJUSTMENT	2.12 STEERING SYSTEM
2.6 AIR CLEANER	2.13 TOE-IN
2.7 SPARK PLUG	2.14 GEAR OIL

2.1 MAINTENANCE DATA

SPECIFICATION

SPARK PLUG:

SPARK PLUG GAP:	0.6-0.7 mm
RECOMMENDED SPARK PLUGS:	NGK BPR7HS
THROTTLE LEVER FREE PLAY:	5-10 mm
IDLE SPEED:	1800±100 rpm
BRAKE LEVER FREE PLAY:	15-25 mm
DRIVE CHAIN SLACK	10-25 mm
FRONT/REAR TIRE PRESSURE	MIN 2 psi (12.5kpa)
TOE-IN	5±10 mm

TORQUE VALUES

SPARK PLUG	12-19 N.m
TIE-ROD LOCK NUT	35-43 N.m

ENGINE OIL — **JASO FC Grade or same degree oil**

GEAR LUBRICATION OIL — **SAE 90**

2.2 MAINTENANCE SCHEDULE

The maintenance internals in the follow table is based upon average riding, conditions. Riding in unusually dusty areas, require more frequent servicing. (For ATV all serial in this service manual)

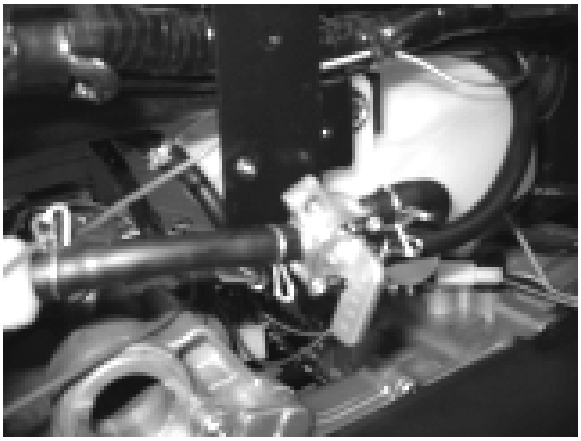
	INITIAL SERVICE (First week)	REGULAR SERVICE (Every 30 operating days)	EVERY YEAR
FUEL LINE			I
THROTTLE OPERATION	I	I	
AIR CLEANER		C	
SPARK PLUG		I	
CARBURETOR IDLE SPEED	I	I	
DRIVE CHAIN	I, L	I, L	
BRAKE SHOE WEAR			I
BRAKE SYSTEM	I	I	
NUT, BOLT, FASTENER	I	I	
WHEEL	I	I	
STEERING SYSTEM			I
SUSPENSION SYSTEM			I
C.V.T. AIR FILTER		C	
GEAR OIL			R
REVERSE GEAR OIL-RXL90R			R

Note – I: Inspect and Clean, Adjust, Lubricate or Replace, if necessary
C: Clean L: Lubricate R: Replace

2.3 FUEL TUBE

Inspect the fuel lines for deterioration, damage or leakage and replace if necessary. (For RXL50 / 90)

(For RXL70 / RXL90R / RXL50M)

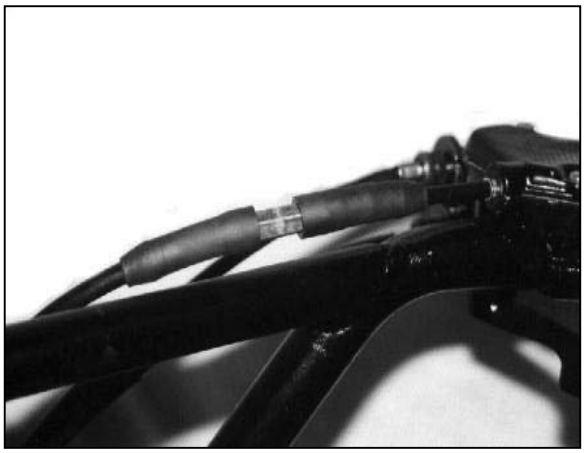


2.4 THROTTLE OPERATION

Inspect for smooth throttle lever full opening and automatic full closing in all steering positions.
Inspect if there is no deterioration, damage or kinking in the throttle cable, replace it if necessary.
Check the throttle lever, free play is 5-10 mm at the tip of the throttle lever.
Disconnect the throttle cable at the upper end.
Lubricate the cable with commercially lubricant to prevent premature wear.

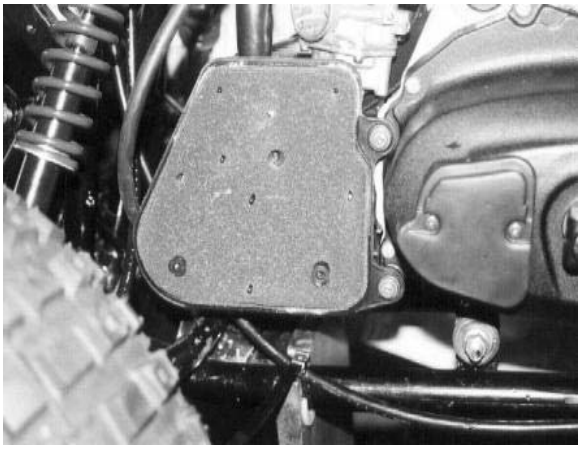
2.5 THROTTLE CABLE ADJUSTMENT

Slide the rubber cap of the adjuster off the throttle Housing, loosen the lock nut and adjust the free play of the throttle lever by turning the adjuster on the throttle housing. Inspect the free play of the throttle lever.



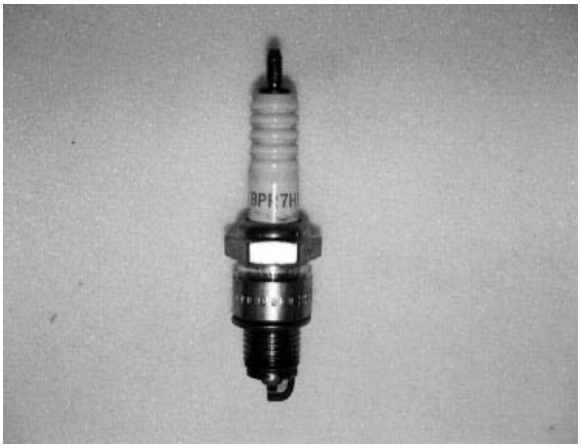
2.6 AIR CLEANER

Unscrew the air cleaner cover screws.
Pull out the air filter element from the air cleaner case.
Wash the element in non-flammable solvent, squeeze out the solvent thoroughly.
Let it dry.
Soak the filter element in gear oil and then squeeze out the excess oil.
Install the element into air cleaner carefully.



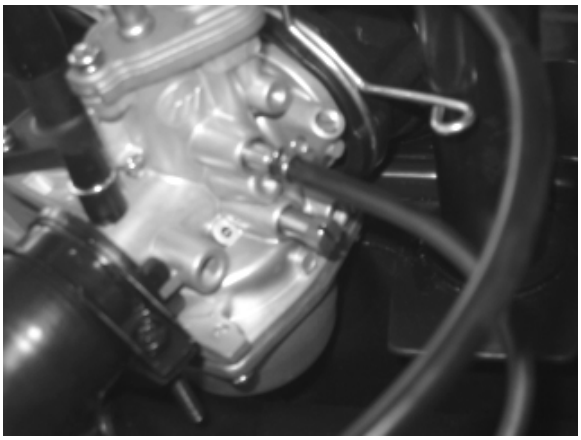
2.7 SPARK PLUG

This spark plug located at the front of the engine.
Disconnect the spark plug cap and unscrew the spark plug.
Check the spark plug electrodes for wearness.
Change a new spark plug if the electrodes and insulator tip appear unusually fouled or burned.
Discard the spark plug if there is apparent wear or if the insulator is cracked or chipped.
The spark plug gap shall keep in 0.6-0.7mm.
With the sealing washer attached, thread the spark plug in by hand to prevent cross threading.
Tighten the spark plug with 12-19 N.m



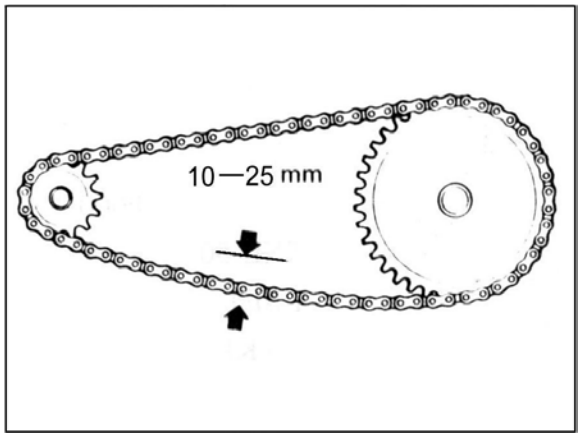
2.8 IDLE SPEED

Connect an engine speed meter.
Warm up the engine, 10 minutes are enough.
Turn the idle-speed adjust screw on the carburetor to obtain the idle speed. "Turn in" (clockwise) will get higher speed. "Turn out" (counter clockwise) will get lower speed.
IDLE SPEED: 1800±100 rpm

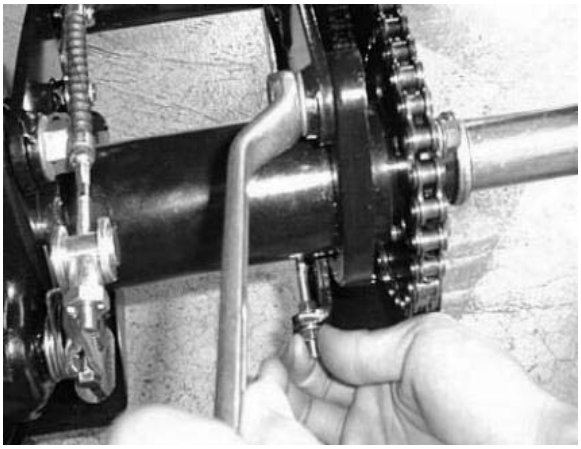


2.9 DRIVE CHAIN

Inspect the chain slack. The standard is 10-25mm.



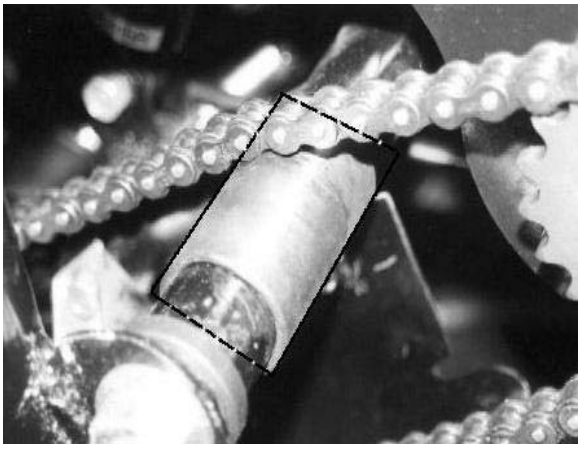
Adjust the chain slack.
Loose the lock bolts (4 pcs) then adjust the drive chain slack by turn the adjusting nut.
Tighten the four lock bolts.



When the drive chain becomes very dirty, it should be removed, cleaned and lubricated by specify lubricator.
Using commercial chain lubricant to lubricate the drive chain.
Clean the drive chain with kerosene and wipe it dry.
Inspect the drive chain for possible wear or damage.
Replace the chain, if it is worn excessively or damaged.

Inspect the sprocket teeth, if it is excessive wear or damage, replace it.

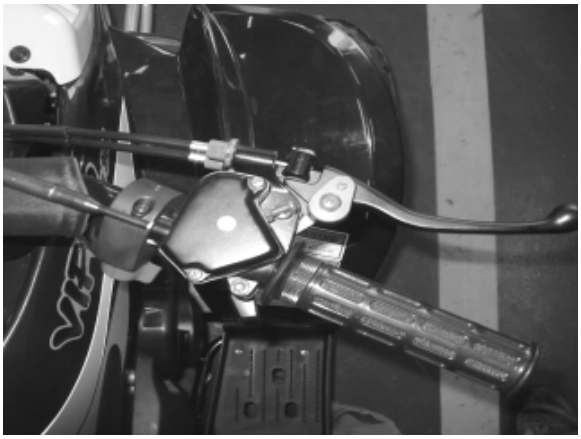
Inspect the chain-tensioned roller.
Replace it, if necessary.



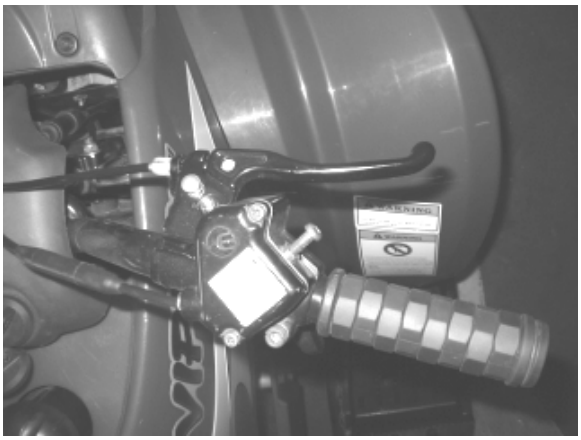
2.10 BRAKE SYSTEM

Inspect the front brake lever and cable for excessive play or other damage.
Replace or repair if necessary.
Measure the free play of the brake lever at the end of the brake lever. The standard of free play is 15-25 mm.

(For RXL50 / 90 / RXL90R, the ATV RXL50M doesn't have the front brake lever.)



For RXL50M, because it have parking brake in rear tire.
So, its controller is at the handler bar right side.



Inspect the rear brake lever and cable for excessive play or other damage.
Replace or repair if necessary.
Measure the free play of the rear brake lever at the end of the lever. The standard is 15-25 mm.
(For all type)

2.11 WHEELS AND TIRES

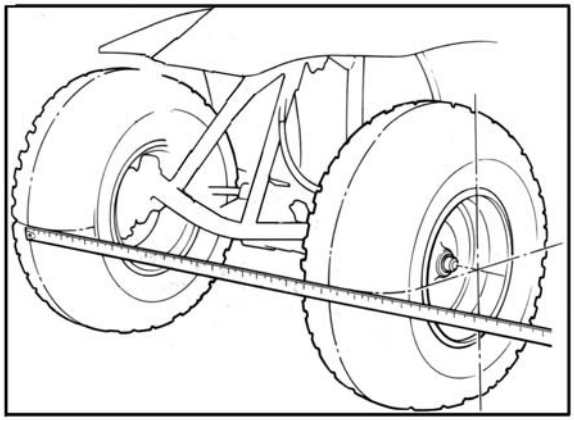
Inspect the tire surfaces for cuts, nails or other sharp objects.
Check the tire surfaces at cold tire condition.
The standard of tire pressure is 2.2±0.3 psi.
(0.15 kgf/cm^2)

2.12 STEERING SYSTEM

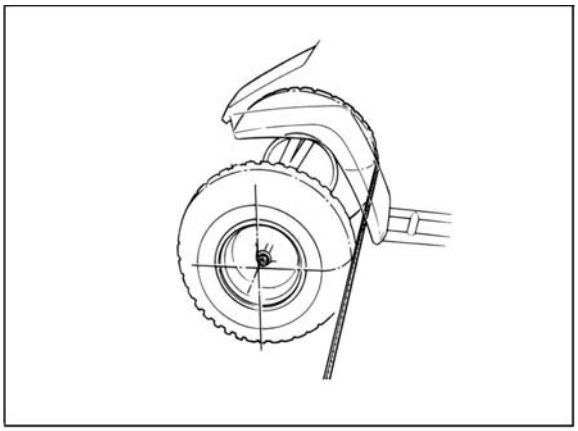
Check the free play of the steering shaft with the front wheels, turned straight ahead.
When there is excessive play, inspect the tie-rod, kingpin bushing and ball joint.

2.13 TOE-IN

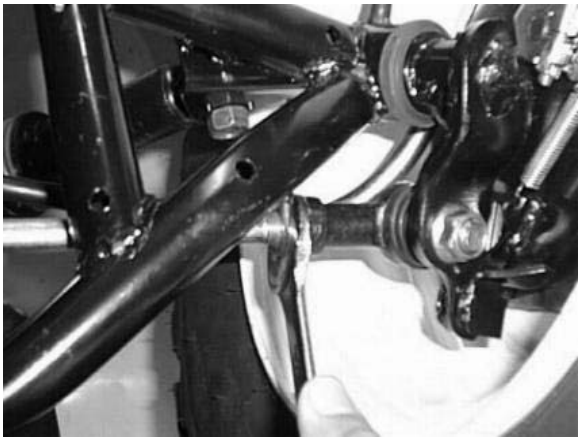
Let the vehicle on level ground and the front wheels facing straight ahead.
Mark the centers of the tires to indicate the axle center height.
Measure the distance between the marks.



Carefully move the vehicle back, let the wheels have turned 180 °, so the marks on the tires are aligned with the axle center height.
Measure the distance between the marks.
Calculate the difference in the front and rear measurements.
Toe-in: 5±10mm



If the toe-in is out of standard, adjust it by changing the length of the tie-rods equally by turning the tie-rod while holding the ball joint.
Tighten the lock nuts.
Torque: 35-43 N.m



2.14 GEAR OIL

Gear oil needs to be changed every year.
There is a gear oil release bolt at the rear of engine.
Unscrew this release bolt and can let the dirty oil flow out.
The re-add oil hole is on the engine case beside gearbox.
(CAUTION: Only the ATV RXL 90R must add the reverse oil)

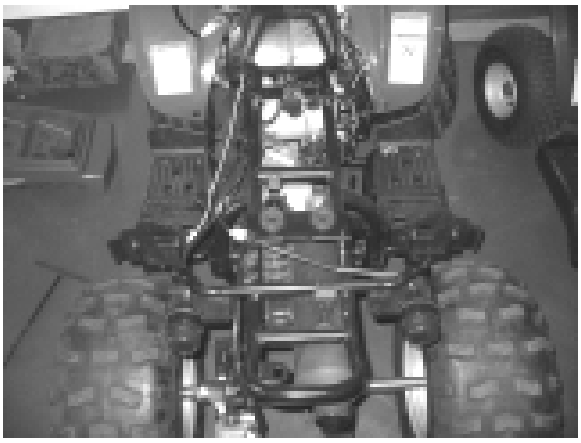
3. ENGINE REMOVAL AND INSTALLATION

3.1 SERVICE INFORMATION
3.2 ENGINE REMOVAL
3.3 ENGINE INSTALLATION

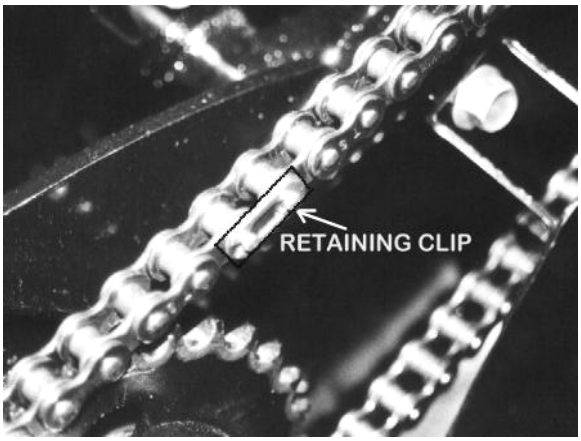
3.1 ENGINE SHALL BE REMOVED IN THE CONDITIONS OF NECESSARY REPAIRMENT OR ADJUSTMENT TO THE TRANSMISSION AND COMBUSTION SYSTEM ONLY

3.2 ENGINE REMOVAL

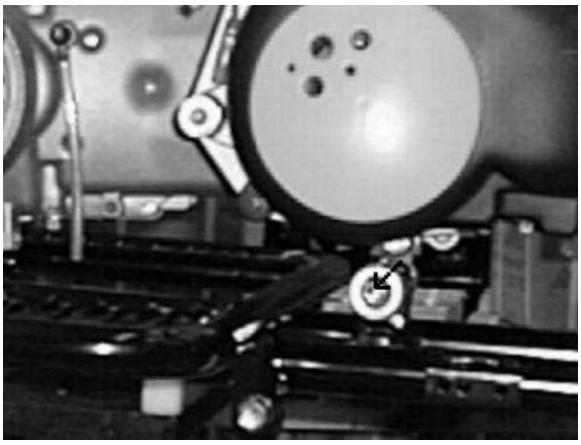
Remove the seat and rear fender. (Chapter 11)
Remove the spark plug cap from the spark plug.
Remove the exhaust pipe.
Disconnect the carburetor cable by unscrew two screws on top of the carburetor.
Take off oil pump cable from the oil pump control plate.
Oil pump is under the right side of engine.



Disconnect the wire connectors. There are three connectors for carburetor auto-choke, starter motor and generator respectively.
Remove the drive chain cover. This is under the chain.
Remove the drive chain retaining clip and master link, and remove the drive chain.



Remove the three engine hanger nuts and bolts.
Remove the engine from the right side of frame.
(The pictures of right side are for ATV RXL 50 / 70 / 90 and RXL 50M)



(The right side picture is for ATV RXL 90R)

3.3 ENGINE INSTALLATION

Engine installation is essentially the reverse order of removal.
The torque of engine hanger bolt is 24-30 Nm
Route the wires and cable in reverse order properly.

4. ENGINE FUEL SYSTEM

4.1 TROUBLESHOOTING	4.3 CARBURETOR
4.2 FUEL TANK	

4.1 TROUBLESHOOTING

ENGINE CAN NOT START

- ★ NO FUEL IN TANK
- ★ NO FUEL TO CYLINDER
- ★ TOO MUCH FUEL GO INTO CYLINDER
- ★ NO SPARK AT PLUG
- ★ AIR CLEANER CLOGGED

ENGINE IDLES UNSTEADY, STALLS OR RUNS POORLY

- ★ UNPROPER ADJUSTMENT TO THE IDLE SPEED SCREW
- ★ IGNITION MALFUNCTION
- ★ FUEL/AIR MIXTURE RATIO NO GOOD
- ★ AIR CLEANER DIRTY
- ★ INSULATOR LEAKS
- ★ FUEL TANK CAP BREATHING HOLE CLOGGED

LEAN MIXTURE

- ★ FUEL JET OF CARBURETOR CLOGGED
- ★ FUEL TANK CAP BREATHING HOLE CLOGGED
- ★ FUEL FILTER CLOGGED
- ★ FUEL FLOWS IN THE TUBE UNSMOOTHLY
- ★ FLOAT LEVEL IN CARBURETOR TOO LOW

RICH MIXTURE

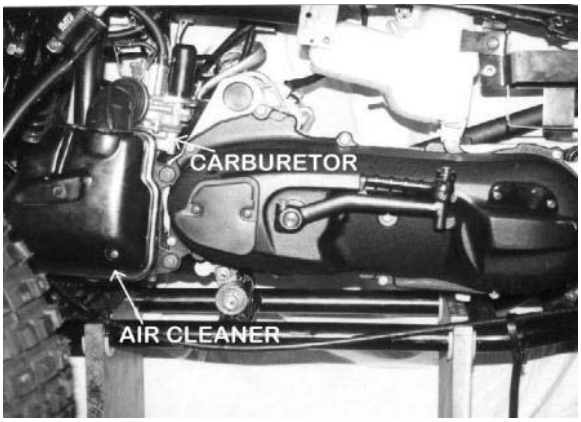
- ★ FLOAT NEEDLE VALVE IN CARBURETOR FAULTY
- ★ FLOAT LEVEL TOO HIGH
- ★ AIR DUCT IN CARBURETOR IS CLOGGED
- ★ AIR CLEANER DIRTY

4.2 FUEL TANK

REMOVAL
Remove the seat and rear fender.
Disconnect the fuel line from the carburetor.
Remove the fuel tank cap and front fender.
Unscrew the fuel tank fixed bolts.
Note: Keep gasoline away from flames or sparks.
Wipe up spilled gasoline at once.

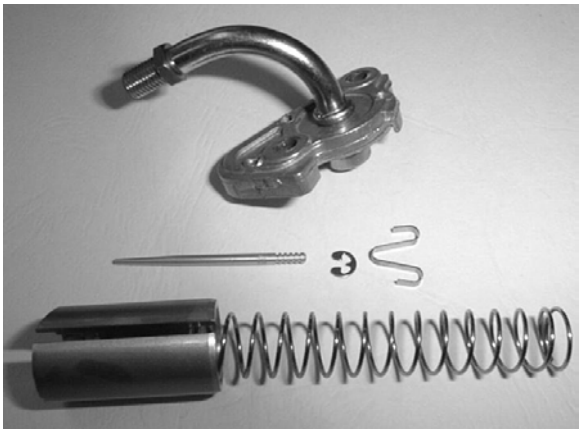
4.3 CARBURETOR

REMOVAL
Remove the air cleaner.
Disconnect the fuel line and auto-choke electric wire.
Unscrew the intake pipe mounting bolts at the carburetor then removes the carburetor.
Note: Turn fuel cup on (off) position



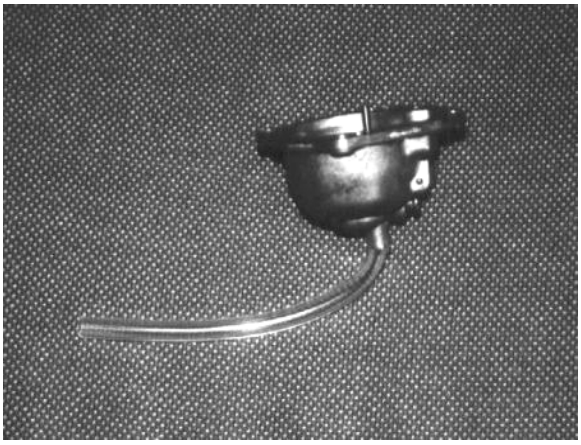
Remove the carburetor cap.
Remove the throttle cable from the throttle valve while depressing the throttle valve spring.

Remove the needle clip retainer, the jet needle and needle clip. Inspect the throttle valve and jet needle surface for wearness, scratches or dirt.

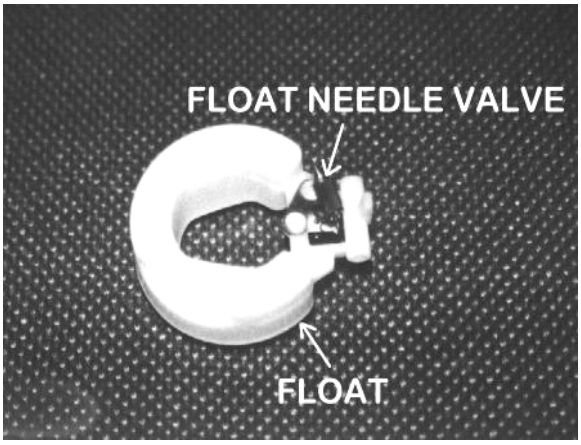


DISASSEMBLY

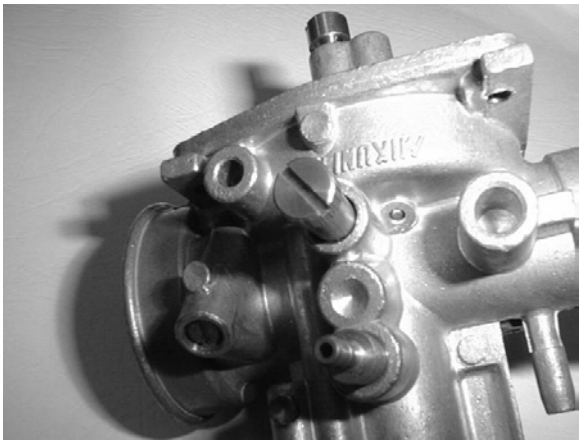
Unscrew the float chamber screws and remove the float chamber.

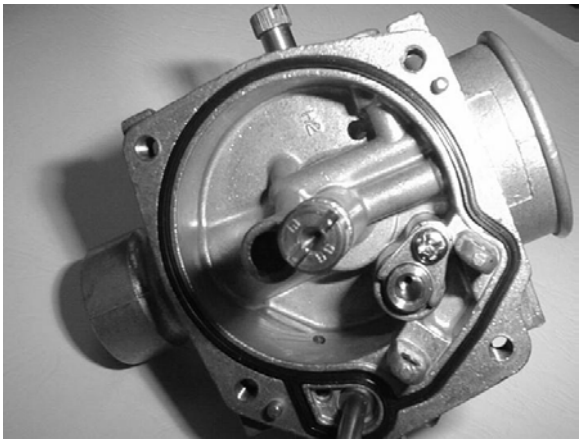


Disassembly the float arm pin, float and float needle valve.
Inspect the seat of the float needle valve for wear or damage.



Disassembly the idle jet, main jet, idle speed adjust screw and idle mixture adjusts screw.
Inspect all the jets and screws for wear or damage.
Clean the passages and jets with compressed air.





ASSEMBLY

Clean all parts in solvent and blow it dry with compressed air.
Assembly is essentially the reverse order of disassembly.

THROTTLE VALVE ASSEMBLY

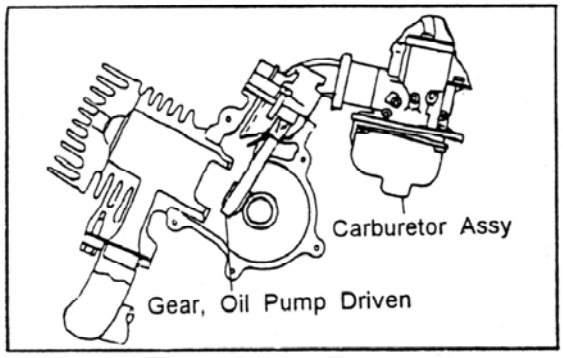
Install the needle clip on the jet needle.
Install the jet needle into the throttle valve.
Assembly the throttle cable, spring and the throttle valve.
Align the throttle valve groove with the idle speed adjust screw and install the carburetor cap to the carburetor.

5. ENGINE LUBRICATION AND COOLING SYSTEM

5.1 ENGINE LUBRICATION SYSTEM	5.4 COOLING SYSTEM
5.2 CAUTION	5.5 TROUBLESHOOTING
5.3 OIL PUMP	

5.1 ENGINE LUBRICATION SYSTEM

The engine drives the pump gears of oil pump crankshaft. Pump gears rotate the plunger shaft in oil pump. This shaft sent the lubricating oil into the crankcase to mix with the mixture of air-fuel flow evenly.
The oil drops and foam cover the cylinder inner wall, piston surface and piston rings.



5.2 CAUTION

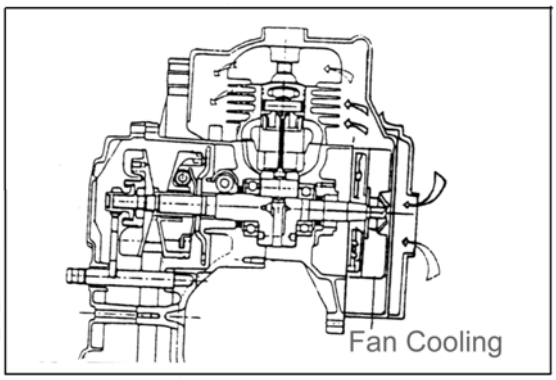
Having enough oil supply to engine is very important.
If the oil quantity is not enough, this engine will be serious scratched, and then this engine will stop, even cannot work again.
When this engine is serious scratched, you need to change the piston, piston rings and cylinder together.
Also you need to check the combustion system and lubrication system carefully.

5.3 OIL PUMP

The quantity of oil that deliver out from oil pump increased by the engine speed and the carburetor throttle open width. Oil pump is under the right side of the engine and connected by a control cable of throttle.

5.4 COOLING SYSTEM

The engine-cooling fan sucks the air.
The cooling fan is on the right side of engine.
The air is forced to flow through cylinder fin and cylinder head. So, the cylinder and piston will not over heat.



5.5 TROUBLESHOOTING

NO ENOUGH OIL SUPPLY TO ENGINE

- ★ THE OIL LEVEL IN OIL TANK IS TOO LOW.
- ★ OIL TUBES WERE NOT FIXED WELL.
- ★ OIL HAS LEAKAGED FROM TUBE ENDS.
- ★ OIL TUBES WERE BROKEN.
- ★ OIL TUBES WERE CLOGGED.
- ★ OIL PUMP CANNOT WORK.

ALWAYS INSUFFICIENT OIL LEVEL IN LUBRICATE OIL TANK

- ★ EXTERNAL OIL LEAKS
- ★ WORN CYLINDE HEAD GASKET
- ★ WORN PISTON RINGS

6. ENGINE COMBUSTION SYSTEM

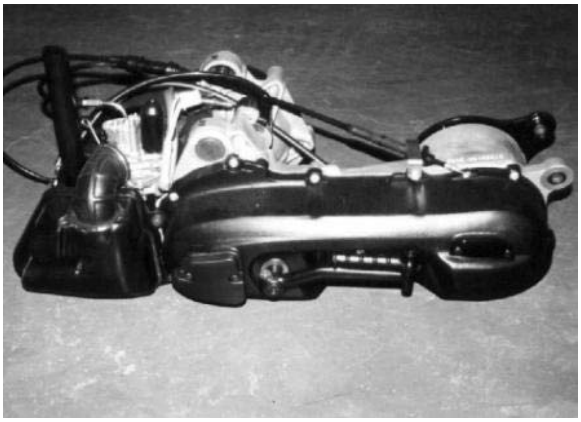
11.1 TROUBLESHOOTING	11.3 CYLINDER AND PISTON INSPECTION
11.2 CYLINDER AND PISTON REMOVAL	11.4 INSTALLATION

6.1 TROUBLESHOOTING

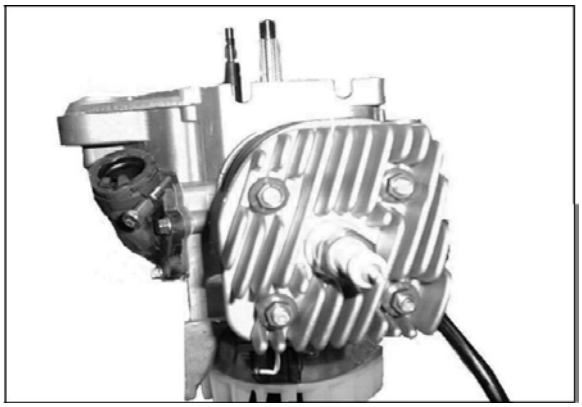
LOW COMPRESSION	★ CYLINDER HEAD
	HEAD GASKET LEAKING OR DAMAGED
	WARPED OR CRACKED CYLINDER HEAD
	★ CYLINDER OR PISTON RINGS WORN OUT
HIGH COMPRESSION	★ EXCESSSIVE CARBON BUILD-UP ON PISTON
	HEAD OR IN COMBUSTION CHAMBER
EXCESSIVE NOISE	★ PISTON AND CYLINDER WORN OUT
	★ EXCESSIVE CARBON BUILD-UP
EXCESS SMOKE	★ CYLINDER OR PISTON RINGS WORN OUT
	★ IMPROPER INSTALLATION OF PISTON RINGS
	★ PISTON OR CYLINDER WALL SCORED OR SCRATCHED
OVERHEATING	★ EXCESSIVE CARBON BUILD-UP ON THE PISTON OR COMBUSTION CHAMBER
	★ ENGINE COOLING SYSTEM (FAN, CYLINDER COVER…) WORKS BADLY.
	★ OIL SUPPLY IS OUT OF ORDER.
	★ WRONG IGNITION TIMING

6.2 CYLINDER AND PISTON REMOVAL

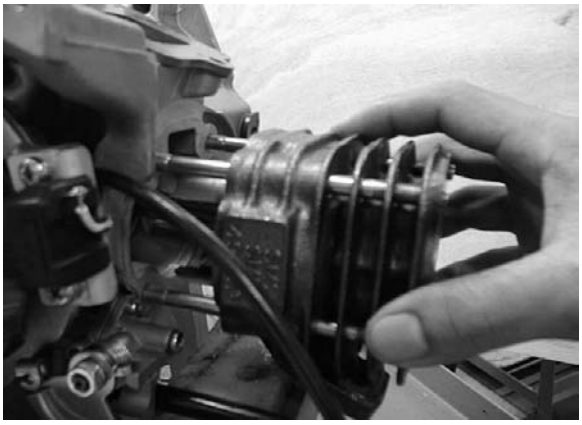
Remove the seat and rear fender.
Remove the exhaust pipe.
Remove the spark plug cap.
Disconnect the wire.
Drag out the engine.
Disassembly the air cleaner and carburetor.



Remove the intake pipe mounting bolts.
Remove the cylinder bolt nuts.



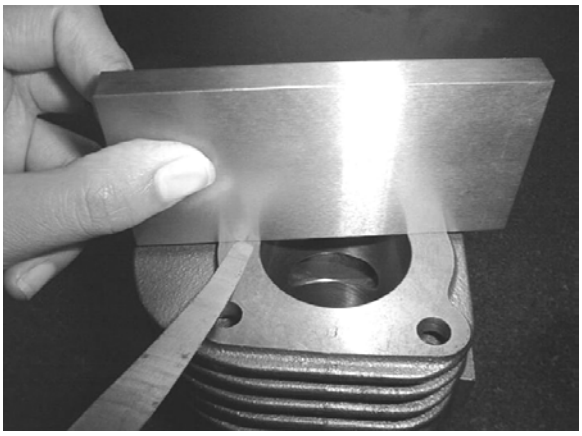
Remove the cylinder head.
Remove the cylinder carefully, then you can see the whole piston.
Remove one piston pin clip.
Remove the piston and piston pin.
Spread each piston ring and remove it by lifting up at a point just opposite the gap.
Note: Don't let the clip drop into engine crankcase.



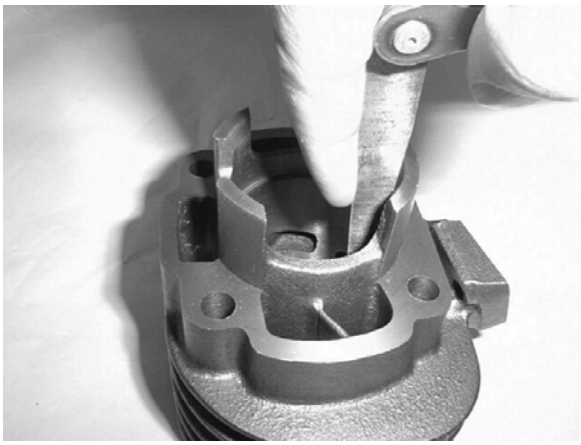
6.3 CYLINDER AND PISTON INSPECTION

Inspect the cylinder bore for wear or damage.
Measure the cylinder inner diameter at three levels in X and Y-axis.
Taper limit: 0.10 mm
Out of round: 0.10 mm

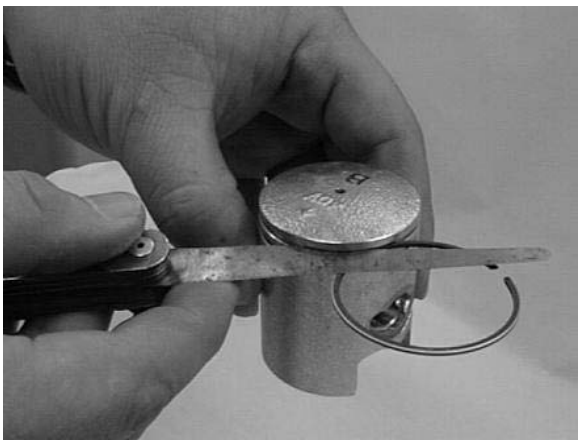
Check the cylinder head mating surface for warp with a straight edge and feeler gauge.
Service limit: 0.10 mm



Insert each piston ring into the cylinder, and measure the end gap.
Service limit: 0.5 mm



Measure the clearance between ring and groove.
Service limit: 0.09 mm



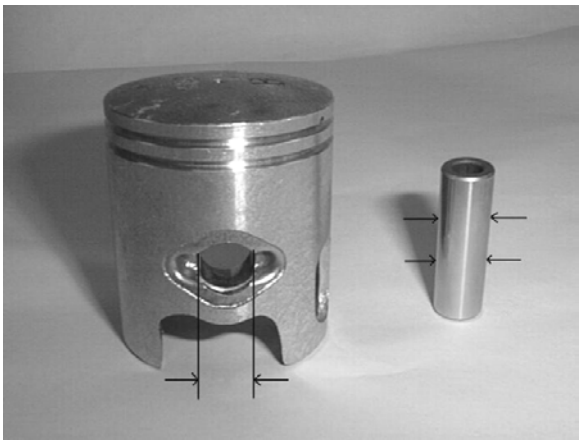
Measure the piston outer diameter at 10 mm high from the skirt's bottom.
Service limit:

RXL			RXL	RXL
50 cc	**70** cc	**90** cc	**90R** cc	**50M** cc
39.9 mm	**46.9 mm**	**49.9 mm**	**49.9 mm**	**39.9 mm**

Measure the piston pin bore, and the piston pin outer diameter.

Pin outer diameter service limit:

RXL			RXL	RXL
50 cc	**90R** cc	**50M** cc	**90** cc	**50** cc
9.96 mm	**9.96 mm**	**1.96 mm**	**1.96 mm**	**9.96 mm**



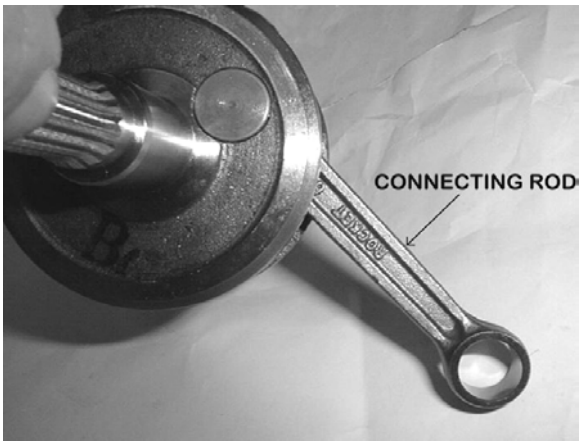
Pin bore service limit:

RXL			RXL	RXL
50 cc	**90R** cc	**50M** cc	**90** cc	**50** cc
10.04 mm	**10.04 mm**	**12.04 mm**	**12.04 mm**	**10.04 mm**

Measure the connecting rod small end inner diameter with a small bore diameter gauge.

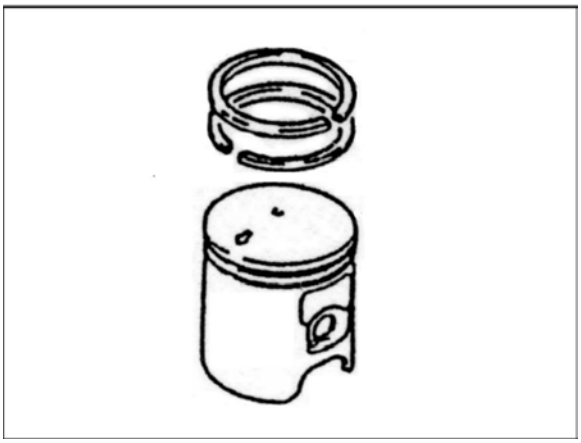
Service limit:

RXL			RXL	RXL
50 cc	**90R** cc	**50M** cc	**90** cc	**50** cc
14.06 mm	**14.06 mm**	**15.06 mm**	**15.06 mm**	**14.06 mm**

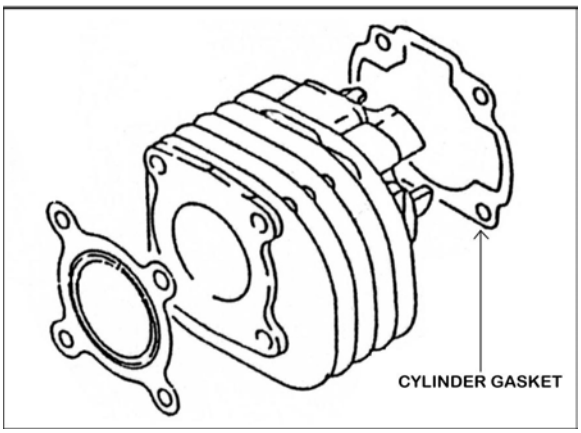


6.4 INSTALLATION

Install the piston rings with the marks facing up. Do not damage the piston rings by spreading the ends too far.



Clean the cylinder gasket surface being careful not to drop any gasket material into the crankcase.



Apply some oil to inside of the connecting rod small end.
Install the piston, piston pin and clip.
Install the piston with the arrow mark facing the exhaust pipe.
Do not align the piston pin clip end gap with the piston cutout.

Install a new cylinder gasket.
Apply a thin coat of engine oil to the piston rings and cylinder wall.
Install the cylinder, compressing the piston rings.
Replace a new cylinder head gasket.
Install the cylinder head.
Tighten the cylinder-mounting bolt.
The torque is 10-14N.m

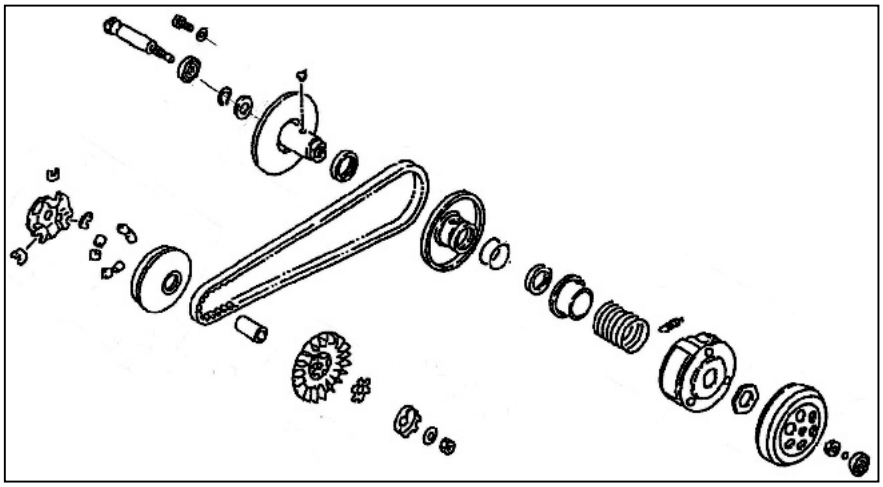
7. TRANSMISSION SYSTEM

7.1 TROUBLE SHOOTING
7.2 THE PARTS DRAWING OF TRANSMISSION SYSTEM
7.3 SHIFT MECHANISM (INCLUDE C.D.I)
7.4 AUTOMATIC CONTINUOUS VARIABLE TRANSMISSION
7.5 CONTINUOUS VARIABLE TRANSMISSION
7.6 GEAR BOX
7.7 ELECTRIC SELF-STARTER MECHANISM
7.8 KICK STARTER
7.9 DISASSEMBLY AND CHECK OF C.V.T. SYSTEM

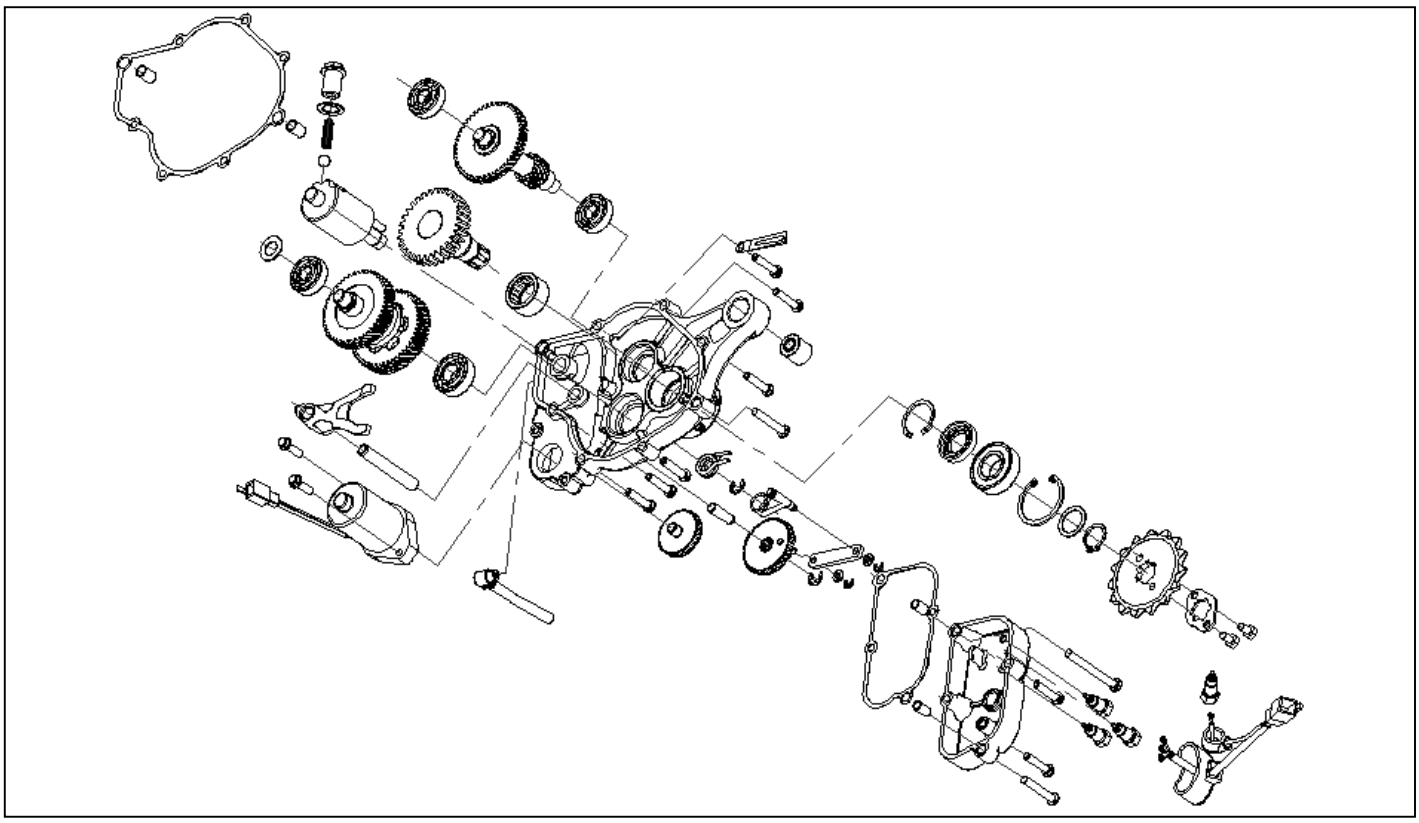
7.1 TROUBLESHOOTING

ABNORMALLY ACT IN SHIFTING AND CAN'T RESET	★ FAULTY C.D.I
	★ FAULTY SHIFT MOTOR
	★ FAULTY SENSOR (F, N1, R, N2)
	★ FAULTY SHIFT SPRING OR GEAR
CAN NOT MOVE AFTER ENGINE START	★ BELT WORN
	★ FRONT PULLEY WORN OR BROKEN
	★ LINING OF CLUTCH WORN
	★ FAULTY SHIFT SPRING
CAN NOT RUN AT HIGH SPEED	★ BELT WORN
	★ ROLLERS WORN
	★ SPRING OF REAR PULLEY IS DISTORTED
ENGINE STOP AFTER SHIFT SUCCESSFULLY	★ FAULTY C.D.I
THE FUNCTION OF SPEED LIMITED IS ABNORMAL	★ FAULTY C.D.I

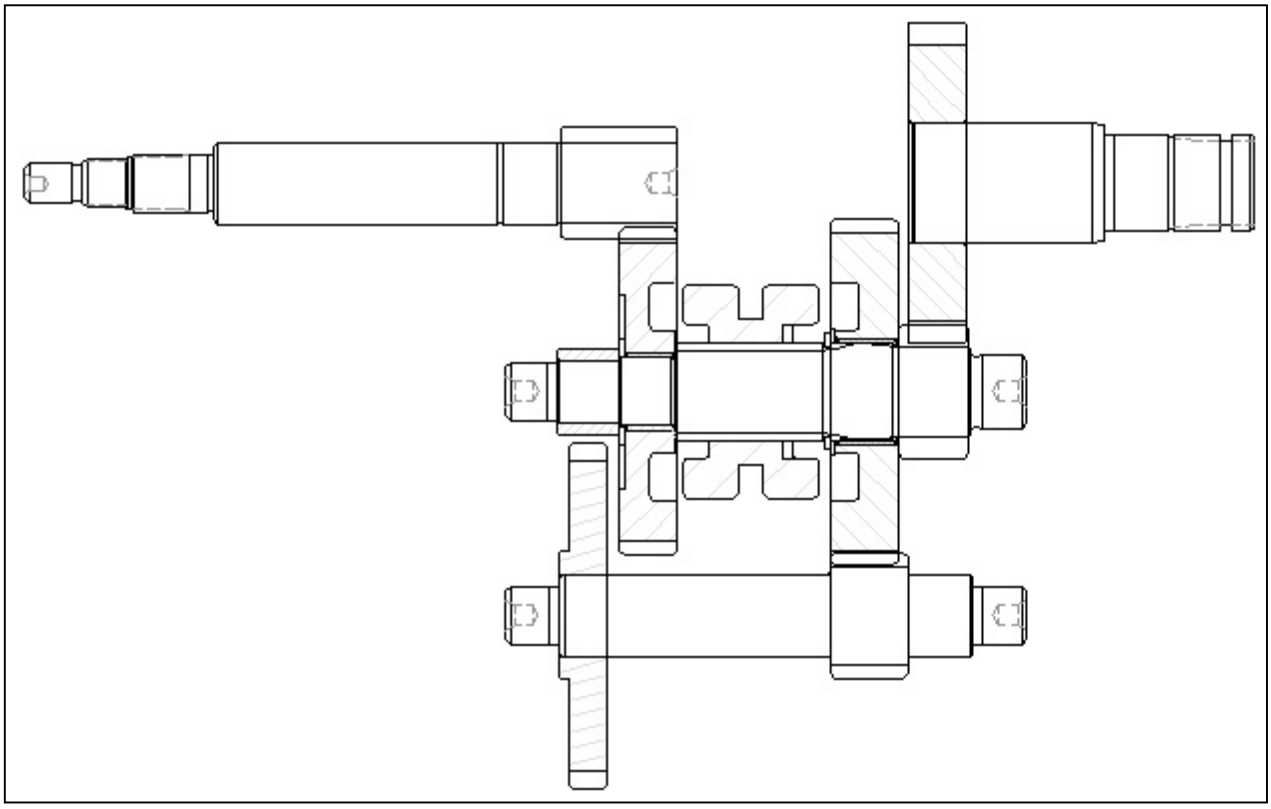
7.2 THE PARTS DRAWING OF TRANSMISSION SYSTEM



C.V.T



Shift Mechanism For RXL 90R



Gear Box For RXL 90R

7.3 SHIFT MECHANISM

GENERAL

For mission repair, the engine must separate from frame.

Full stop the vehicle before shifting to forward or reverse.

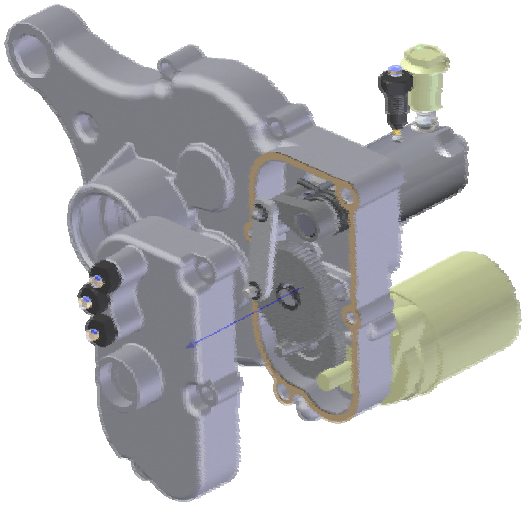
Fill the recommended oil after install the mission cover.

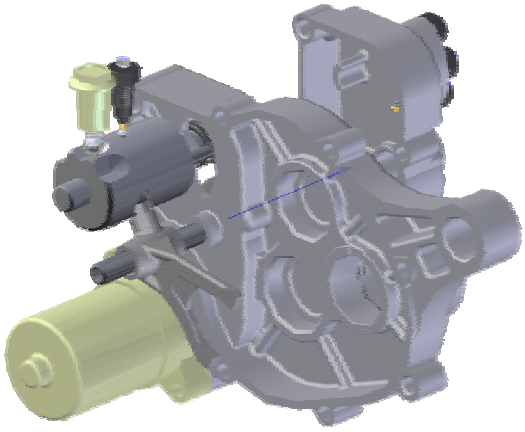
Avoid shifting to forward when vehicle is reversing, otherwise it will cause gears set to damage.

TROUBLESHOOTING

DETECT METHOD	CONDITION	REASON
Detect battery voltage	Under 10.5V	1.ACG can't charge 2.Bettery failure
CDI signal	Compared with good CDI, it is NG	CDI failure
Wire connect	NG	1.Main wire burn down 2.Motor wire come away
Detect motor	After work 10 seconds without load, resistance value not in 2~5Ω	Motor failure
Detect sensor	No signal 	1.Faulty sensor 2.Sensor wire come away NG
Detect shift gears	Inspect appearance fault	1.Faulty linker,gear,roller 2.Faulty shifting spring
Detect shift mech.	Parts dimension NG	1.Fixed steel ball was faulty or came away 2.Faulty fixed spring 3.Fillister of shifting hub not smooth 4.Head of fork wore

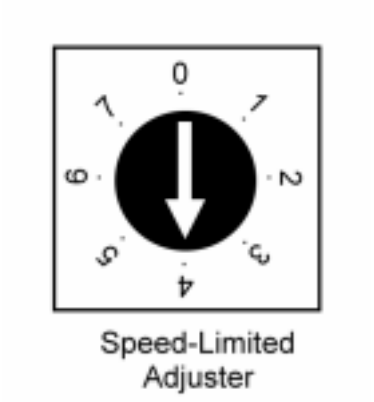
3D DRAWING

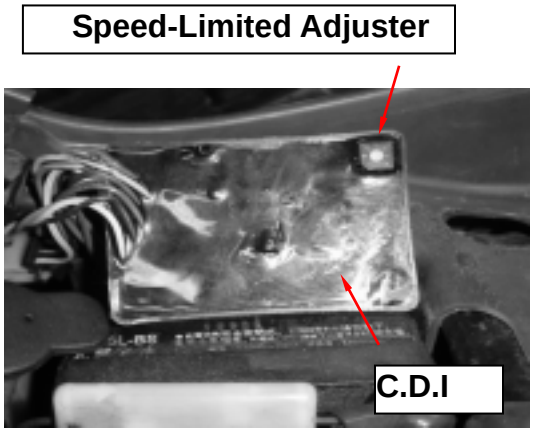




C.D.I

We can find C.D.I under the seat. It include shift control system. Replace it if control system invalid.
There is a speed-limited adjuster in the corner. Adjust speed-limited as follows:





SENSOR

Inspect wire for break or damage and check contact.
Measure sensor dimension as fig-1 after unscrew sensor.
If length is below 30mm, it must be replaced.
Smear with loctite 5699 and screw with torque 25 kgf-cm in assembly.

Service limits: 30 mm
Torque: 30 kgf-cm

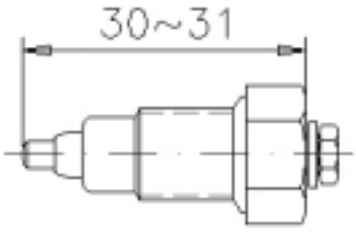
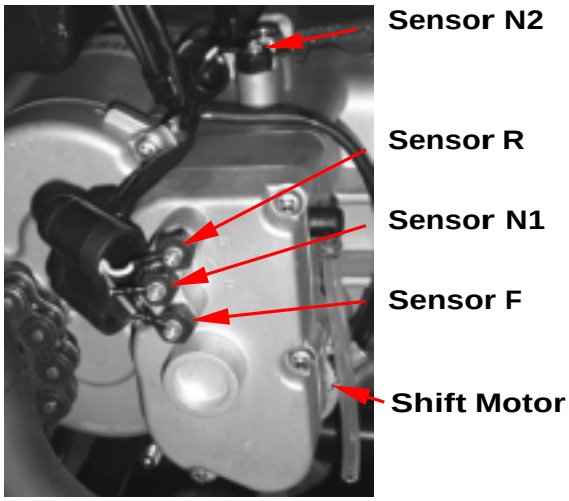


fig-1



SHIFT MECH.

Remove mission side cover and other parts. Check shift gear for wear or damage.
Measure open width of shift spring as fig-2.

If open width greater than 5mm, it must be replaced.
Service limits: 5 mm

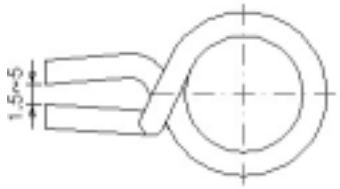
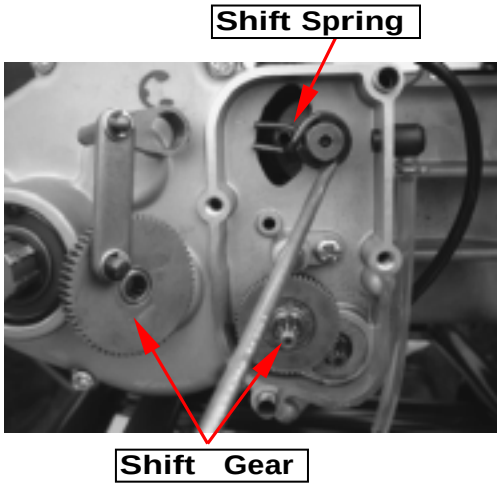


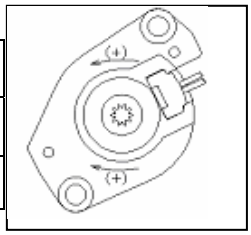
fig-2



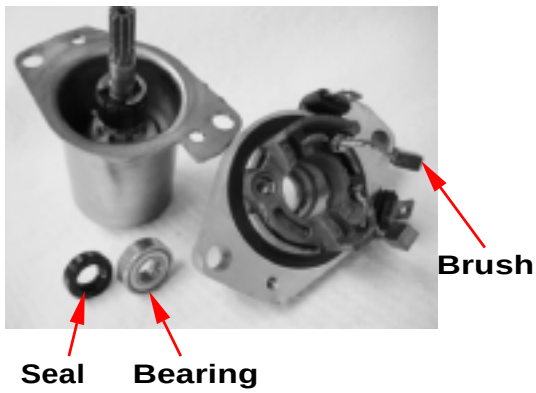
SHIFT MOTOR

Disassembly mission side cover, parts of shift mechanism and mission cover.
Check shift motor whether the action is normal as follow dat.

	Voltage	Current	Torque	rpm
UNLOAD	12V	0.8A MAX.	--	2300
LOADED	12V	2A	0.5 kg-m	1100

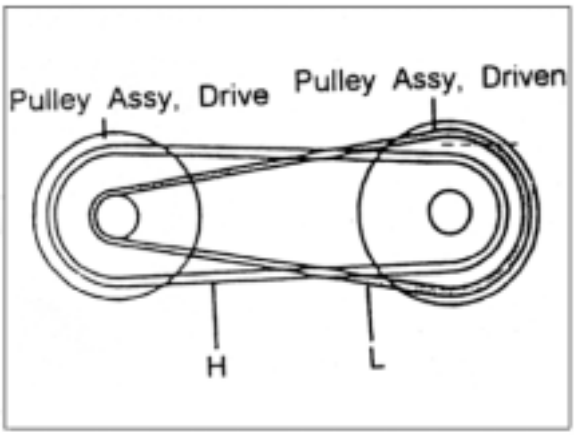


Get seal and bearing after disassembly shift motor of mission cover.
Check seal and bearing for wear or fatigue.
Replace it if necessary.



7.4 AUTOMATIC CONTINUOUS VARIABLE TRANSMISSION

This transmission is the combination of automatic centrifugal clutch and V-belt continuous variable transmission, which can change the transmission ratio automatically.

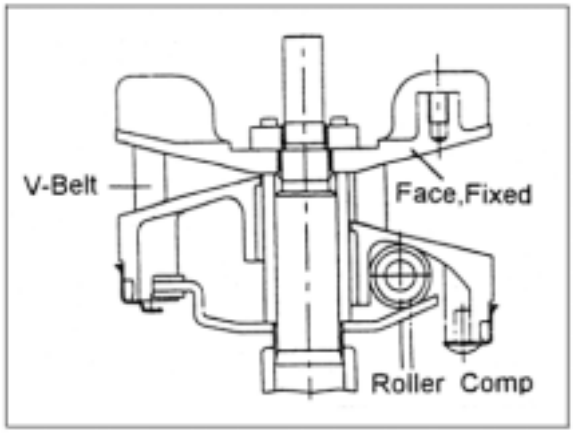


When engine speed increase, the drive pulley will be push to belt by the centrifugal force from six rollers. Then the pitch circle of belt in drive pulley will be larger.
The belt at driven pulley is forced to move to the center of shaft, then the radius of pitch circle is decreased.
The transmission ratio is therefore altered by the alteration of pitch circle's radius.
(In the drawing, "H" means high speed, "L" means low speed)

7.5 CONTINUOUS VARIABLE TRANSMISSION

V-Belt

Made of rubber fiber, resistant to head, pressure and abrasion. The inner side of the Belt is toothed.

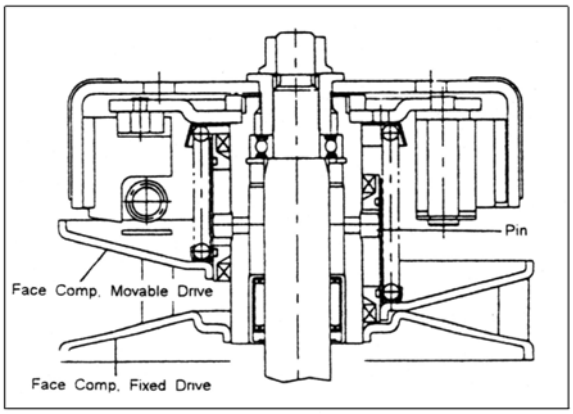


Drive Pulley

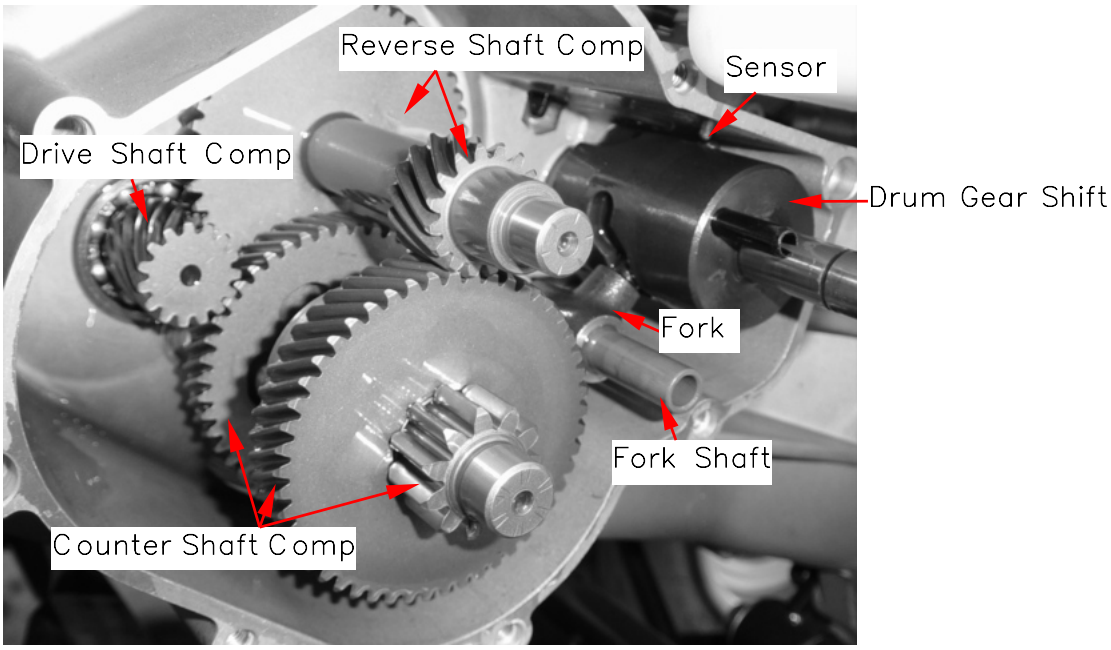
Due to the increasing engine speed, the rollers push the movable drive face by centrifugal force. Then the belt is pressed and enlarges its turning radius.
The aluminum fan is installed on the exterior of fixed drive face. It can reduce the belt temperature.

Driven Pulley

Because the revolving radius of V-Belt at the Drive End is enlarged, the Face Comp Movable Drive is squeezed out by the V-Belt at the Driven End to shorten the revolving radius.
There is a Torque Cam on the Movable Drive Face.
Torque Cam is loaded from outside. When the outside load is higher than the engine's output, the pulley of fixed shaft and belt slip to make the Movable Drive Face move along the inner side of Cam and compensate to increase to high torque (toward to low speed) and make the engine maintain smooth running with original revolution.



7.6 GEAR BOX (For RXL 90R)



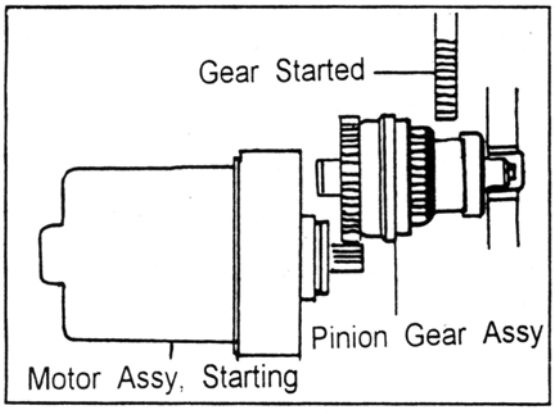
Remove mission side cover, parts of shift mechanism and mission cover.
Inspect gears for wear, scoring, chipping or break.
Replace it if necessary.

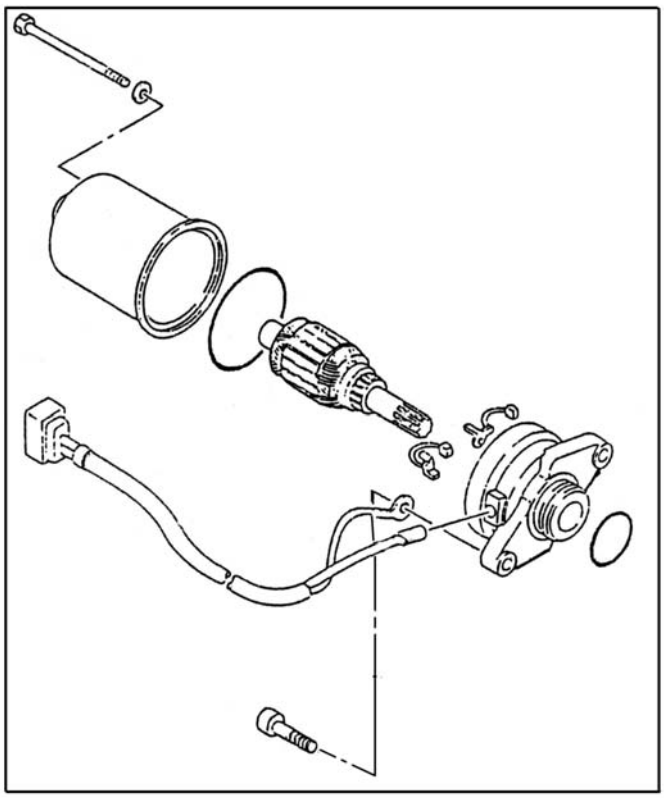
The gear ratio of front gear composition is about $\frac{47}{15} \times \frac{31}{11}$

The gear ratio of reverse gear composition is about $\frac{49}{15} \times \frac{49}{16} \times \frac{31}{11}$

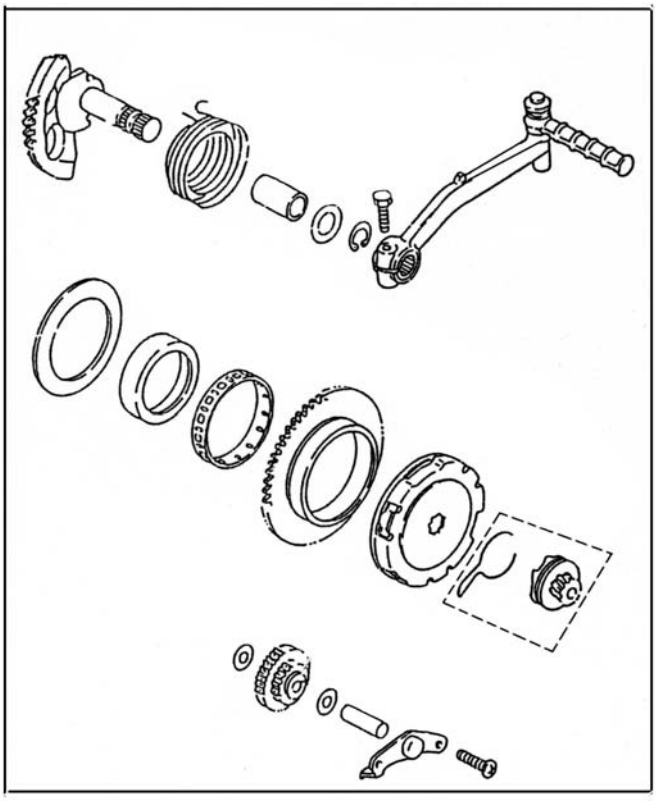
7.7 ELECTRIC SELF-STARTER MECHANISM

Starter Motor is installed on the upper side of engine.
The starter motor can act only when the left hand brake is applied.





ELECTRIC SELF-STARTER MECHANISM



KICK STARTER

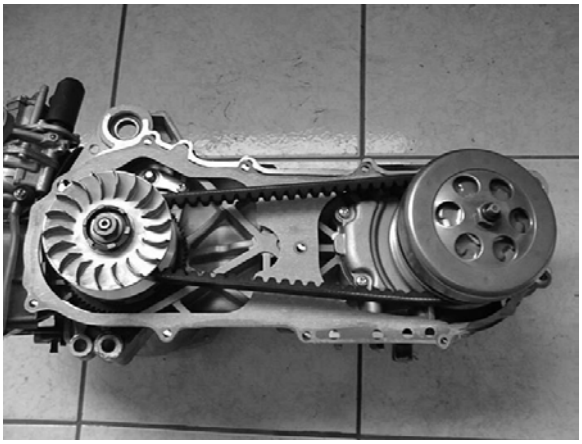
7.8 KICK STARTER

This kick-starter arm is on the left side of engine. When the kick-starter arm is kicked, the gear of start shaft will drive the kick-starter to revolve the crankshaft to start the engine.
After the engine is started, the kick-started will stop transfer the power to the kick-starter driven gear.
When the kick-starter lever is released, the kick-starter gear will go back to its original position.

7.9 DISASSEMBLY AND CHECK OF C.V.T. SYSTEM

Remove the engine clutch cover, by unscrew the fixed bolts.
Check the belt for wear. If necessary, replace the belt.
Service limit: 14.6 mm

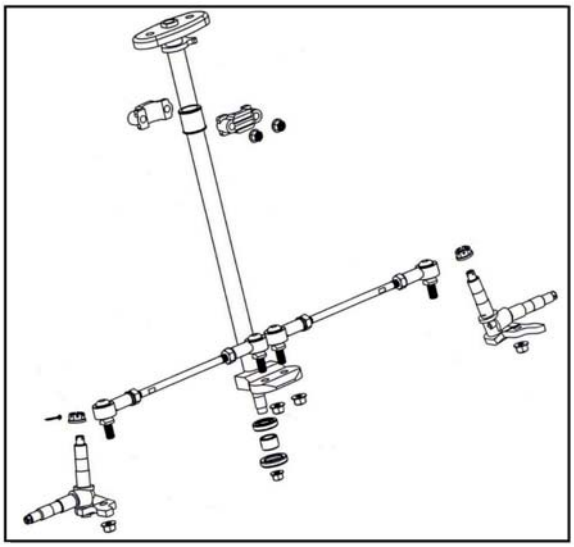
Disassembly the front drive pulley, check the six rollers for wear. If necessary, replace the rollers.



8. STEERING SYSTEM

8.1 THE PARTS DRAWING OF STEERING SYSTEM
8.2 TROUBLESHOOTING
8.3 HANDLEBAR
8.4 STEERING SYSTEM

8.1 THE PARTS DRAWING OF STEERING SYSTEM



8.2 TROUBLESHOOTING

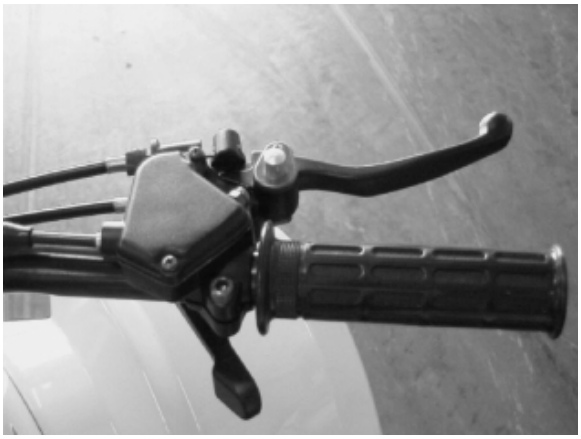
HARD STEERING

- ★ FAULTY TIRE
- ★ STEERING SHAFT HOLDER TOO TIGHT
- ★ INSUFFICIENT TIRE PRESSURE
- ★ FAULTY STEERING SHAFT BEARINGS
- ★ DAMAGED STEERING SHAFT BEARING

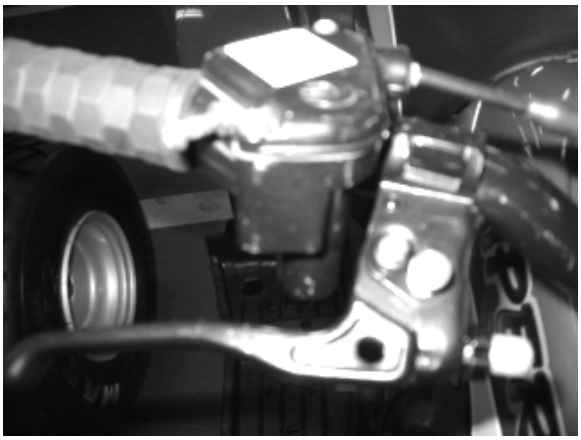
8.3 HANDLEBAR

REMOVAL

Remove the throttle lever housing on the right handle bar.
Remove brake lever bracket.
(The picture of right side is for ATV RXL 50/90 and RXL 90R)

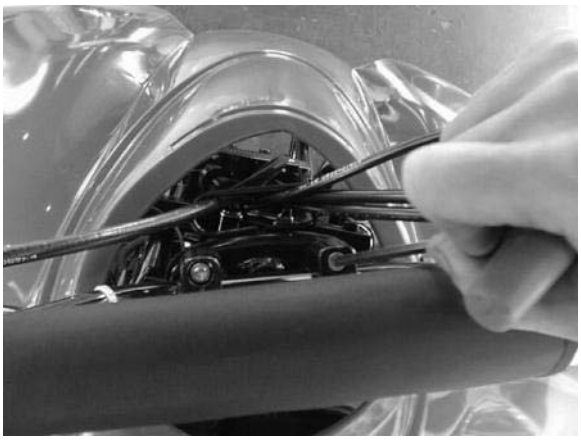


(The picture of right side is for ATV RXL 50M)



Remove engine switch housing on the left handle bar.
Remove rear brake level bracket.
(For all type)

Remove the bolts attaching the upper holder cover.
Remove the handlebar holder and handlebar.



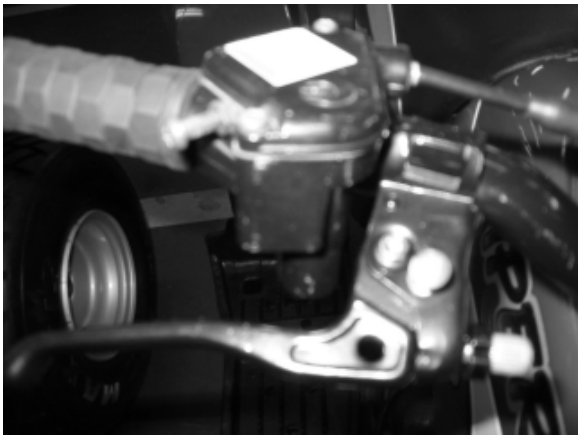
INSTALLATION

Put the handlebar on the lower holders.
Make sure the handlebar punch mark with the tops of the handlebar lower holders.
Install the handlebar upper holders with the L or R marks facing forward.
Tighten the forward bolts first, and then tighten the rear bolts.
Install the handlebar upper holder's cover.
Install the switch housing, aligning the boss with the hole. Tighten the upper screw first then tighten the lower one.

Install the rear brake lever bracket, aligning the boss with the hole.
Tighten the screw securely.
(The picture of right side is for ATV RXL 50/90 and RXL 90R)

Aligning the split line of the throttle housing and holder with the punch mark.
Tighten the screw securely
(The picture of right side is for ATV RXL 50/90 and RXL 90R)

(The picture of right side is for ATV RXL 50M)



8.4 STEERING SYSTEM (The ATV RXL and KXL and MXL have the same system)

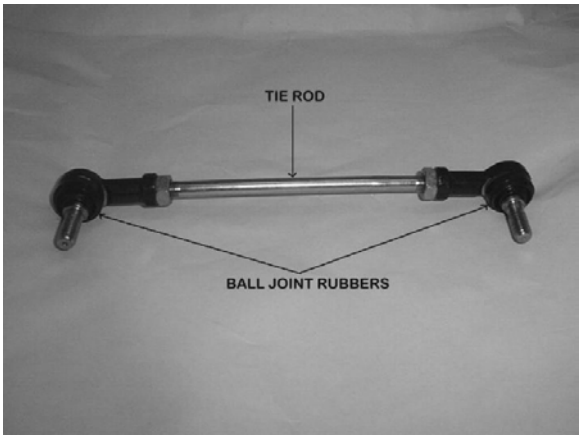
REMOVAL OF KINGPIN AND TIE-ROD

Remove the front wheels and brakes plates.
Remove the four self-lock nuts from the tie-rod ball joints and take off the two tie-rods.

Take off the rubber cap on the kingpin and remove the cotter pins on the kingpin.
Unscrew the castle nut and remove the kingpin.

TIE-ROD INSPECTION

Inspect the tie-rod for damage or bending.
Inspect the ball joint rubbers for damage, wear or deterioration.
Turn the ball joints with fingers. The ball joints should turn smoothly and quietly.

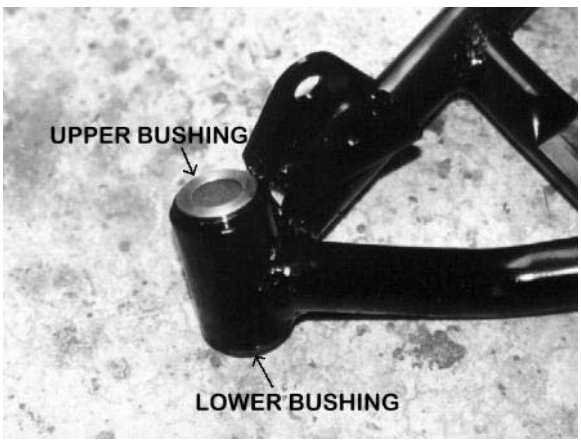


KINGPIN INSPECTION

Inspect the kingpin for damage or cracks.
Measure the kingpin outer diameter.
Upper minimum limit: Ø15.40 mm
Lower minimum limit: Ø16.90 mm

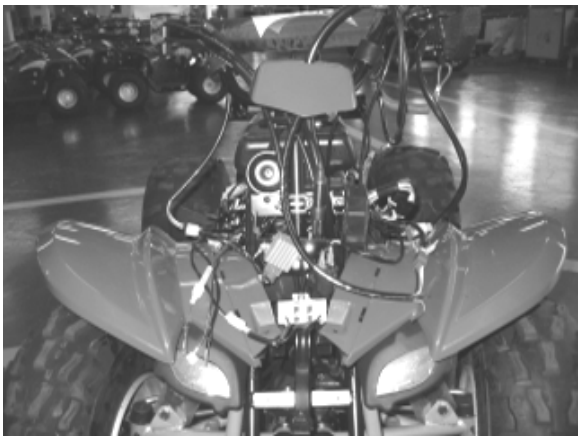
KINGPIN BUSHING INSPECTION

There are two bushing in the sleeve of front swing arm, the upper and lower bushing.
Check the kingpin bushings for wear or damage.
Measure the inner diameter of the bushings.
Upper minimum limit: Ø15.69 mm
Lower minimum limit: Ø17.19 mm



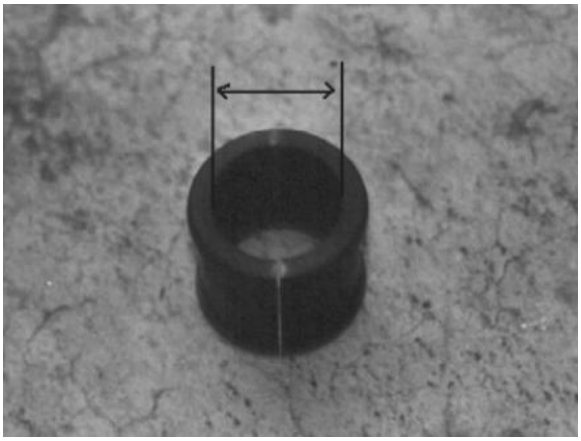
STEERING SHAFT REMOVAL

Remove the handle bar and handle bar cover. (see paragraph 8-1)
Remove the front fender. (see paragraph 11-1)
Unscrew the steering shaft fixed out below shaft.
Pull steering shaft carefully.



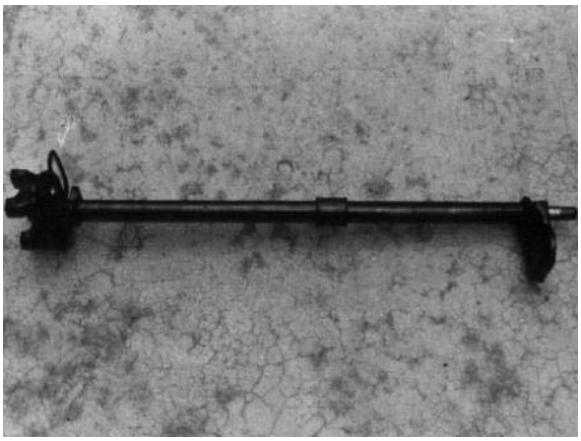
BUSHING INSPECTION

Remove the steering shaft.
Remove the bushing from the shaft.
Inspect the bushing for damage or wear, replace if necessary.
Measure the bushing inner diameter.
Maximum limit: Ø22.8 mm



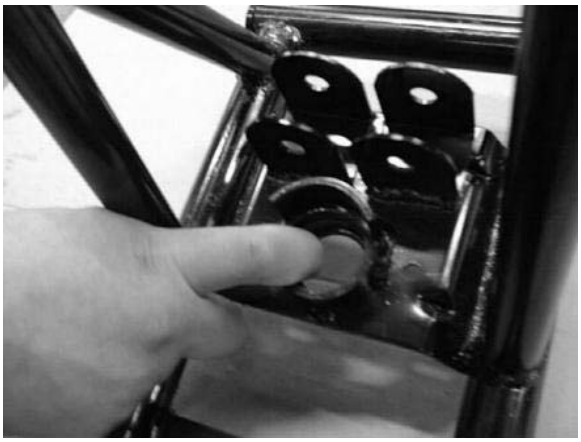
STEERING SHAFT INSPECTION

Inspect the steering shaft for damage or cracks.
Measure the steering shaft outer diameter in the location of the bushing.
Minimum limit: Ø22.0 mm



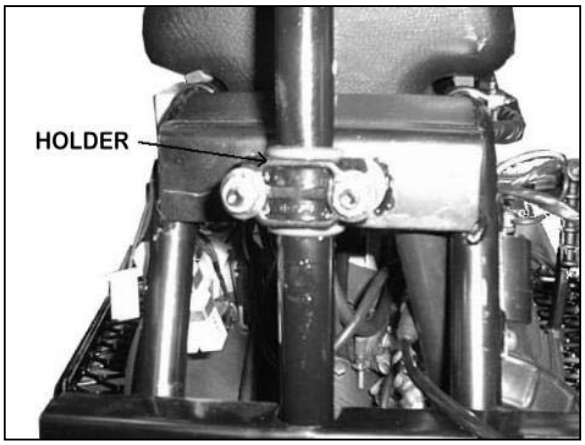
STEERING SHAFT BEARING INSPECTION

Turn the shaft bearing with finger.
The bearing is on the front part of frame.
The bearing should turn smoothly and quietly.
Also check that the bearing outer race fits in the holder.
Replace the bearing if necessary.

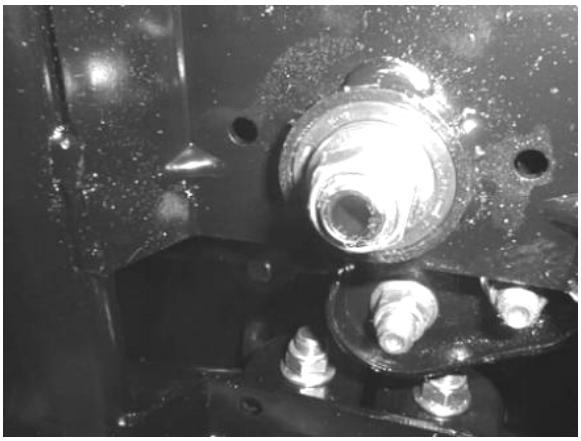


INSTALLATION OF STEERING SHAFT

Install the steering shaft with the bushing.
Apply grease to the bushing.
Install the bushing holder and tighten the nuts.
Torque: 24-30 N.m

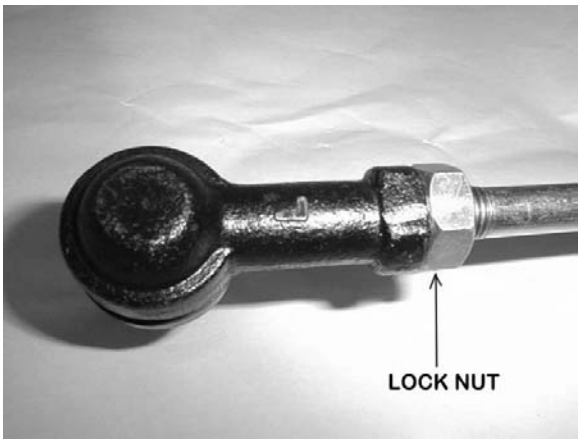


Install the steering shaft nut and tighten it.
This nut is under this steering shaft.
Torque: 50-60 N.m

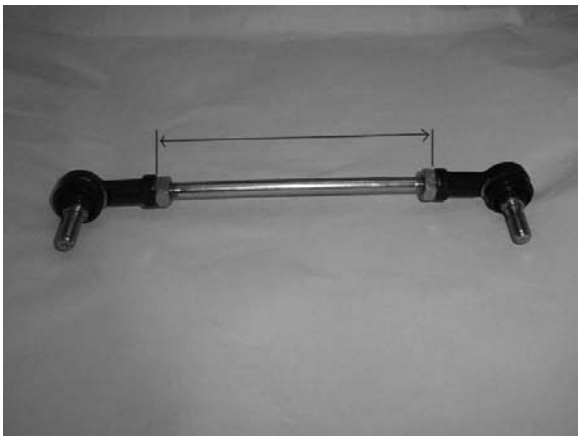


INSTALLATION OF TIE-ROD

Install the ball joint with " L" mark on the steering shaft side.
Install the tie-rod with the mark on the wheel side.

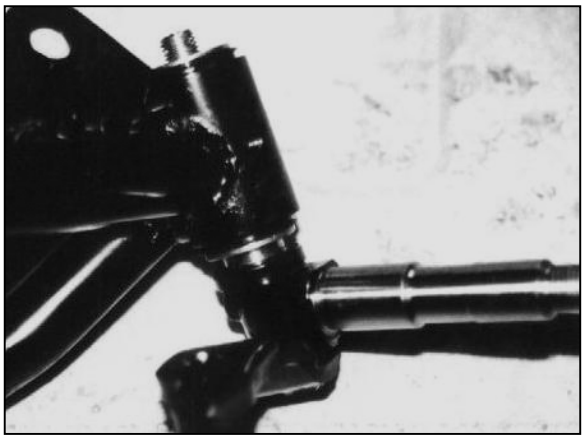


Let the distance between the ball joints be 164 mm for RXL 50/70/90 and RXL90R and RXL50M.
This is temporary setting.



INSTALLATION OF KINGPIN

Use grease to the kingpin lower dust seal lips and install it.
Pump grease to bushing and install the kingpin.
Tighten the kingpin nut,
the setting torque is 30-40 N.m. Fix the waterproof rubber cap.



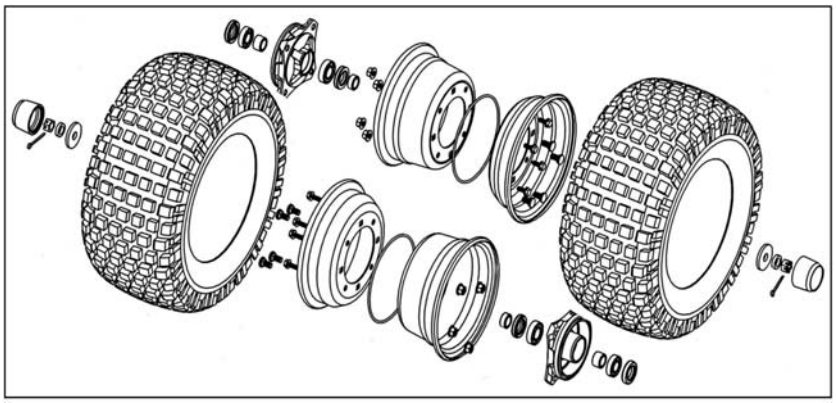
Temporarily, set the distance 147mm between the ball joints.
Install the tie-rod and tighten the nuts.
The setting torque: 35-43 N.m
Install the front brake.
Install the front wheel.
Adjust the toe in. (see chapter 2)

9. FRONT WHEEL SYSTEM

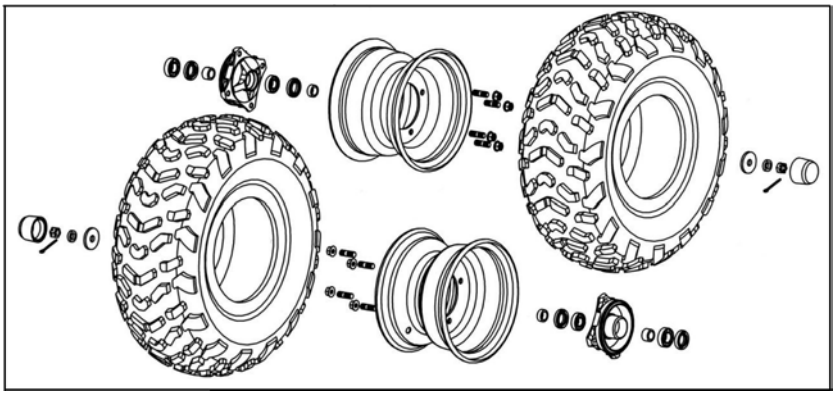
9.1 THE PARTS DRAWING OF FRONT WHEELS SYSTEM	9.3 FRONT WHEEL
9.2 TROUBLESHOOTING	9.4 FRONT BRAKES

9.1 THE PARTS DRAWING OF FRONT WHEELS SYSTEM

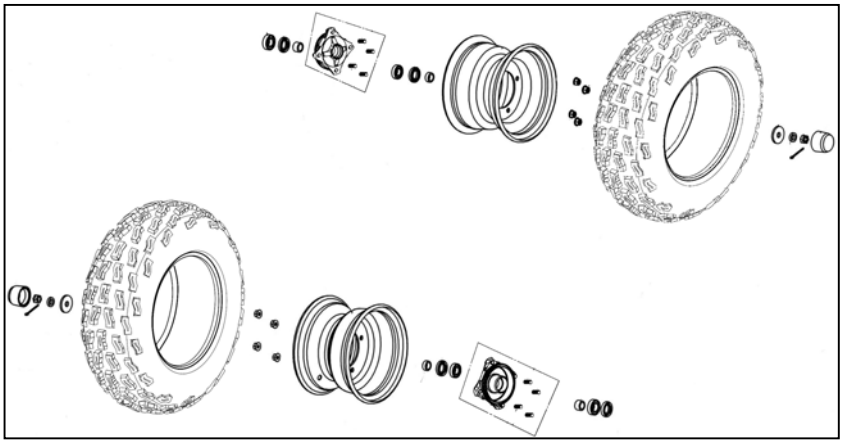
FOR RXL 50



FOR RXL 70 AND RXL 50M



FOR RXL 90 AND RXL 90R



9.2 TROUBLESHOOTING

FRONT WHEEL WOBBLING
- ★ FAULTY TIRE
- ★ WORN FRONT BRAKE DRUM BEARING
- ★ BENT RIM
- ★ AXLE NUT NOT TIGHTENED PROPERLY

BRAKE DRAG
- ★ INCORRECT BRAKE ADJUSTMENT
- ★ STICKING BRAKE CABLE

POOR BRAKE PERFORMANCE
- ★ BRAKE SHOES WORN
- ★ WORN BRAKE DRUM
- ★ BRAKE LININGS OILY, GREASY OR DIRTY
- ★ IMPROPER BRAKE ADJUSTMENT

9.3 FRONT WHEEL

REMOVAL

Raise the front wheels off the ground by placing a block under the frame.
Remove the front wheel nuts, washer and wheels.

INSTALLATION

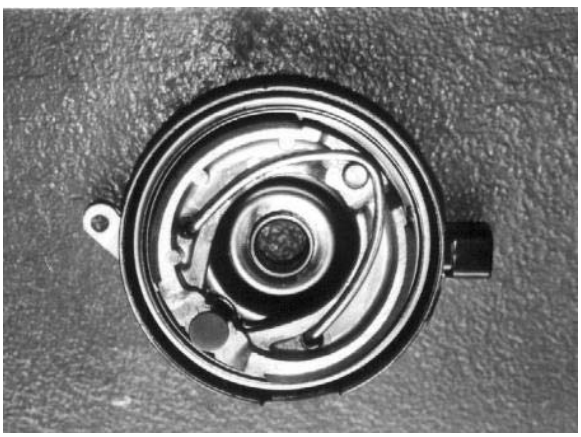
Install and tighten the four-wheel nuts
Torque: 50-60 N.m
Remember put a cotter pin in the castle nut.

9.4 FRONT BRAKES

FRONT BRAKE INSPECTION

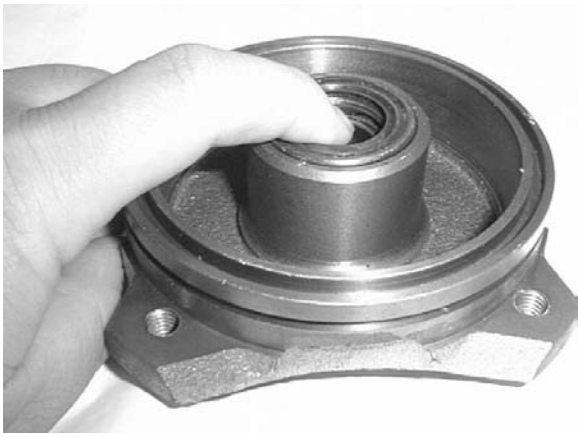
Remove the front wheel.
Remove the brake drum.
(In this section, because of ATV RXL 50M has no front brake. So it is only for ATV RXL 50 / 70 / 90 and RXL 90R.)

Measure the brake lining thickness.
The minimum limit: 1.5 mm
If they are thinner than the minimum limit, replace the brake linings.



Measure the brake drum inner diameter.
The maximum limit: 86 mm

Turn the inner race of each bearing with fingers.
The bearings should turn smoothly and quietly.
If the race does not turn smoothly or quietly, remove and discard the bearings
.



BRAKE PANEL REMOVAL

Disconnect the brake cable from the brake arm.
Remove the brake panel from the knuckle.

Remove brake arm and cam.
Remove return spring.
Remove indicator plate and felt seal.

INSTALL BRAKE PANAL

Apply grease to the brake cam and anchor pin and install the cam in the brake panel.
Soak the felt seal in the engine oil and install the seal on the brake cam.

Install the brake arm on the cam by aligning the punch mark and the groove on the cam.
Tighten the brake arm bolt and nut.
Torque: 4-7 N.m
Install the return spring.

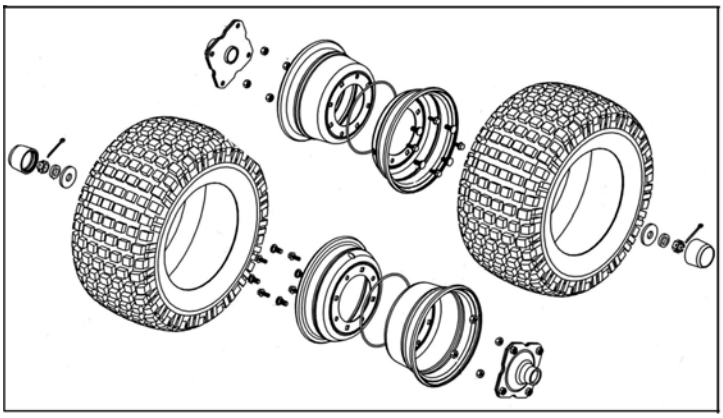
Install the brake panel on the knuckle.
Connect the brake cable to the brake arm.

Install the brake arm cover.
Tighten the screws securely.
Position the brake shoes in their original locations and install the brake shoe spring.
Install the brake drum and front wheel.
Install the castle nut and cotter pin.

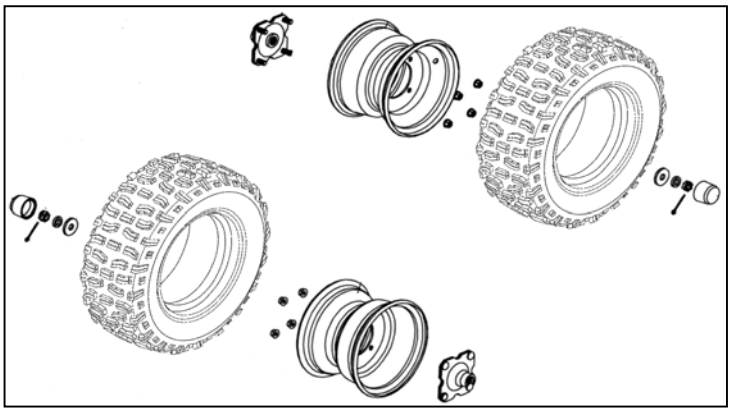
10. REAR WHEEL AND BRAKE SYSTEM

10.1 THE PARTS DRAWING OF REAR WHEEL SYSTEM
10.2 TROUBLESHOOTING
10.3 DRIVE MECHANISM
10.4 HYFRAULIC DISC BRAKE SYSTEM

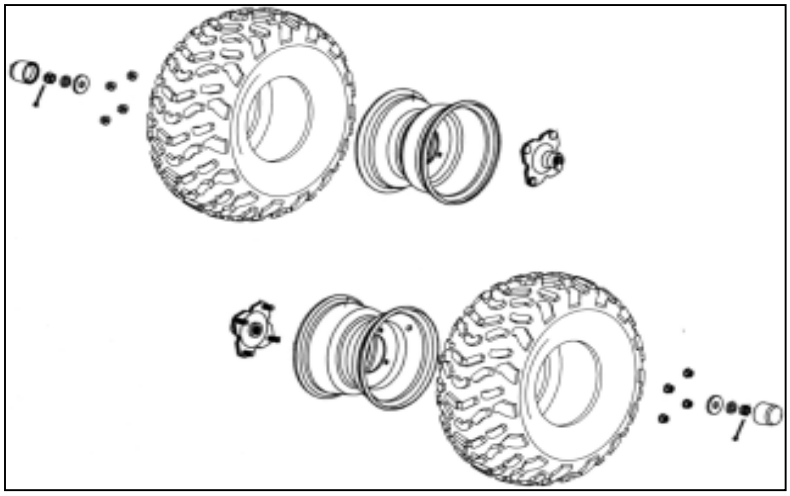
10.1 THE PARTS DRAWING OF REAR WHEEL SYSTEM



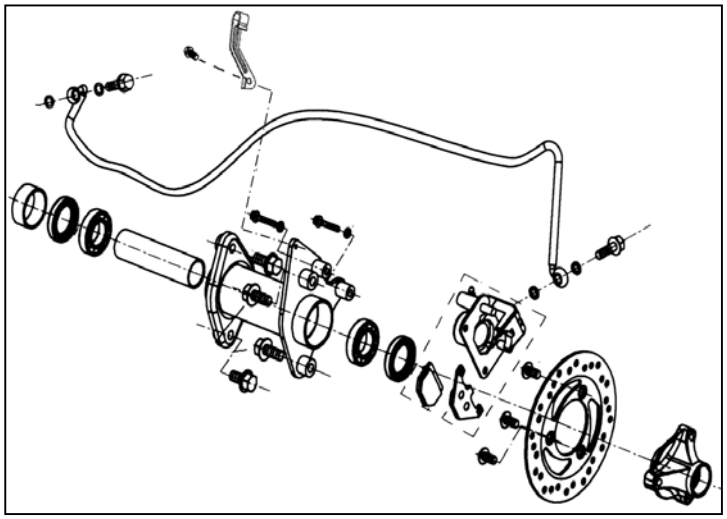
FOR ATV RXL50



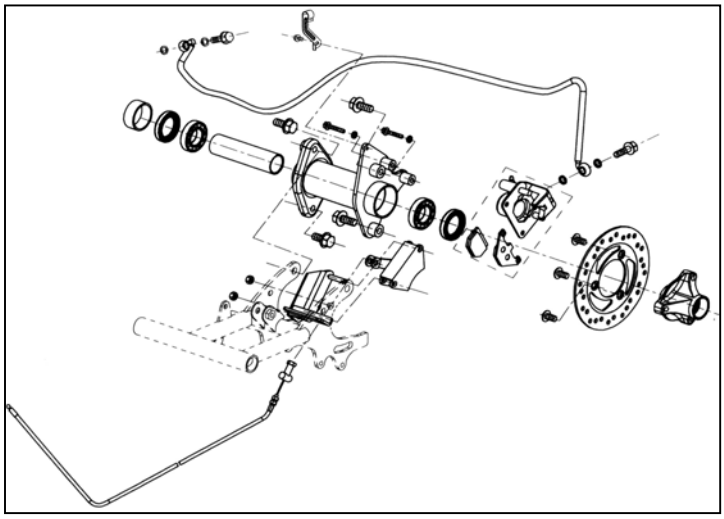
FOR ATV RXL90 AND RXL90R



FOR ATV RXL70 AND RXL50M



FOR RXL 50/70/90/90R



FOR RXL 50M

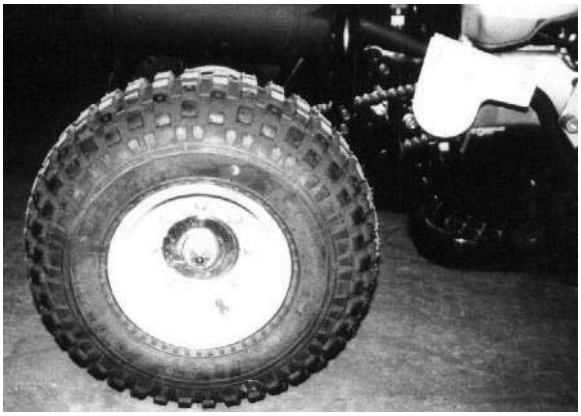
10.2 TROUBLESHOOTING

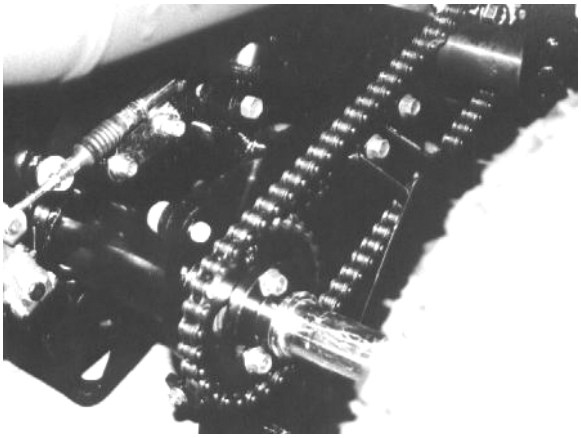
BAD BRAKE PERFORMANCE	★ **BRAKE SHOES ARE WORN**
	★ **BAD BRAKE ADJUSTMENT**
	★ **BRAKE LININGS ARE OILY, GREASY OR DIRTY**
	★ **BRAKE DRUMS ARE WORN**
	★ **BRAKE ARM SETTING IS IMPROPERLY ENGAGE**
VIBRATION OR WOBBLE	★ **AXLE IS NOT TIGHTENED WELL**
	★ **BENT RIM**
	★ **AXLE BEARINGS ARE WORN**
	★ **FAULTY TIRES**
	★ **REAR AXLE BEARING HOLDER IS FAULTY**
BRAKE DRAG	★ **INCORRECT BRAKE ADJUSTMENT**
	★ **STICKING BRAKE CAM**
	★ **STICKING BRAKE CABLE**

10.3 DRIVE MECHANISM

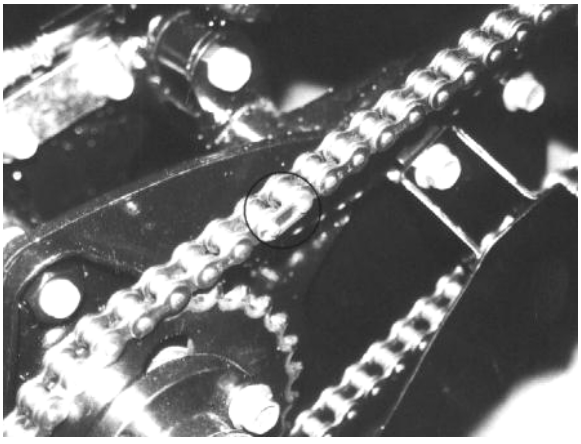
REMOVAL AND INSPECTION

Remove the rear wheel
Let the rear wheels off the ground.
Release the cotter pin, axle nut and washer.
Release the wheel and wheel hub.
Remove the drive chain under cover.

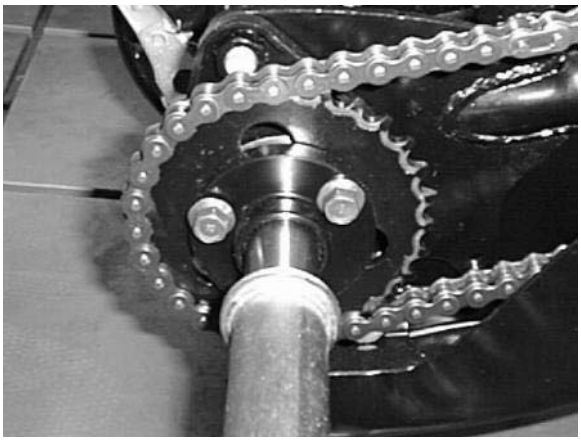




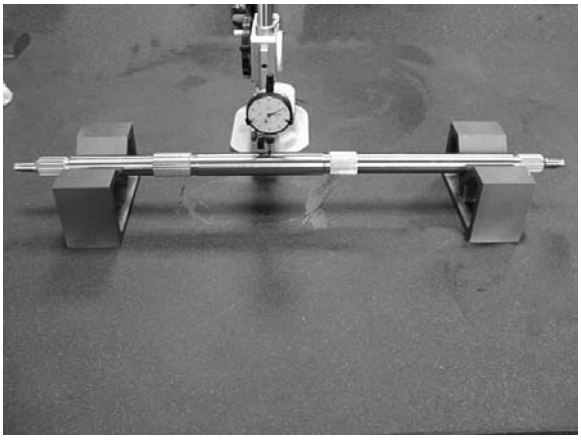
Disassemblies the chain retaining clip and master link.



Disassembly the driven sprocket, axle and sprocket collar.
Check the driven sprocket for damage or wear.



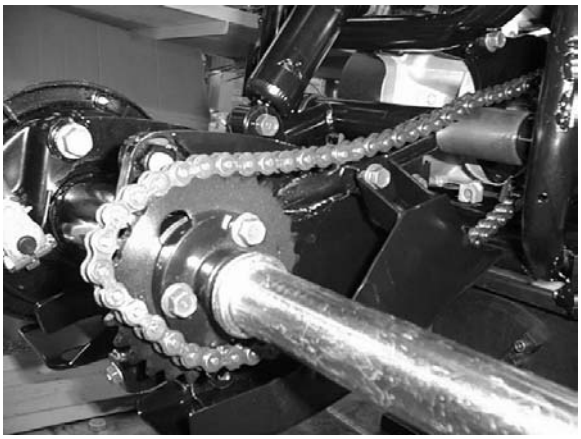
Let the rear axle lie in V-blocks and check the run out.
The run out limit is 0.5 mm



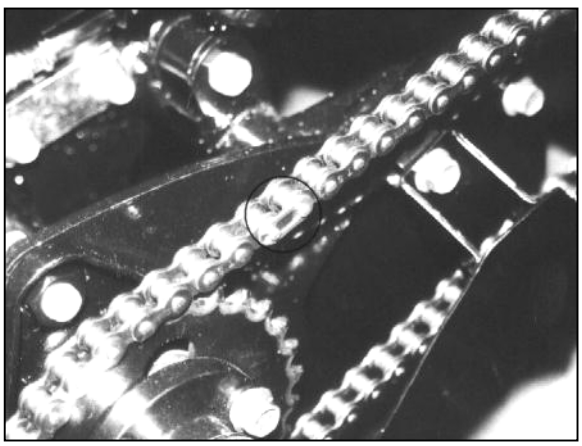
Check the turning of bearing with fingers.
The bearings should turn smoothly and quietly.
Replace if necessary.

INSTALLATION

Add grease to the dust seal lips and install dust seals.
Assembly the rear axle and the driven sprocket.



Assembly the drive chain on the driven sprocket.
Assembly the master link and retaining clip.
Note the retaining clip direction.
Install the drive chain cover.
Assembly the chain under cover.

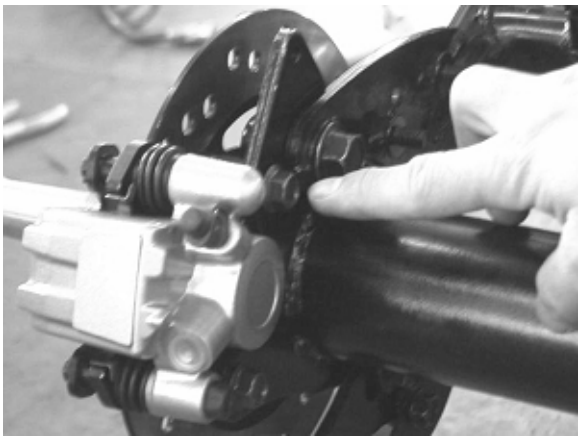


Assembly the wheel.
Tighten the rear axle nut with 60-80 N.m.
Install a new cotter pin.
Adjust rear brake level free play.
Adjust chain slack.

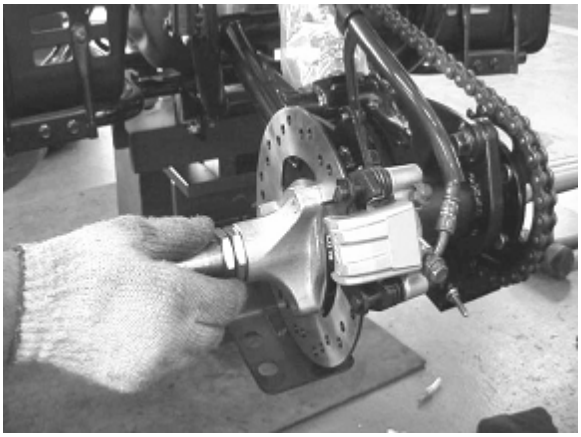
10.4 HYFRAULIC DISC BRAKE SYSTEM

To replace brake disc
To replace brake disc
Remove the rear left tire

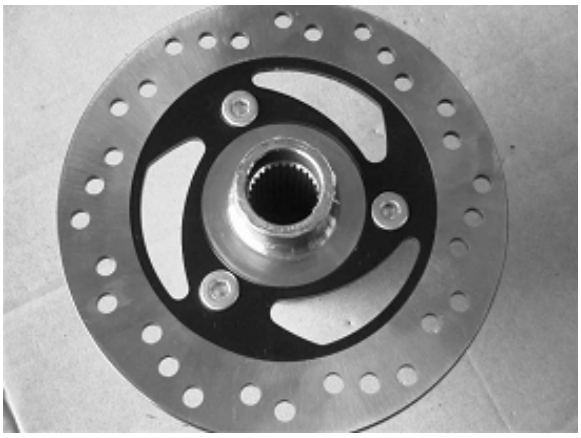
Unscrew the two bolts shown on the photo and remove caliper



Unscrew the rear wheel axle nut and then remove the mounting seat of the disc



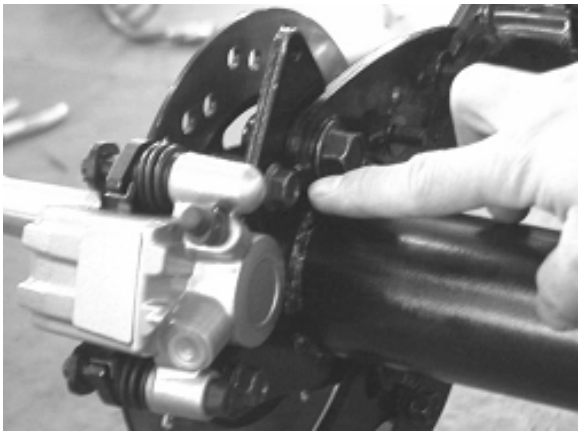
Unscrew bolts and remove the brake disc
Check the thickness of disc and replace a new one
if the thickness less than 3mm



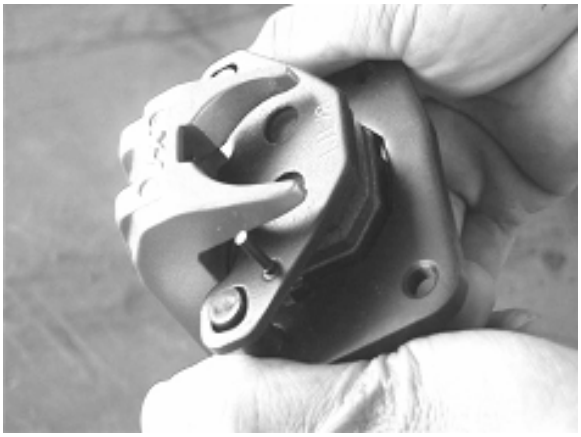
TO REPLACE THE BRAKE SHOE

Remove the rear left tire

Unscrew the two bolts shown on the photo and remove caliper



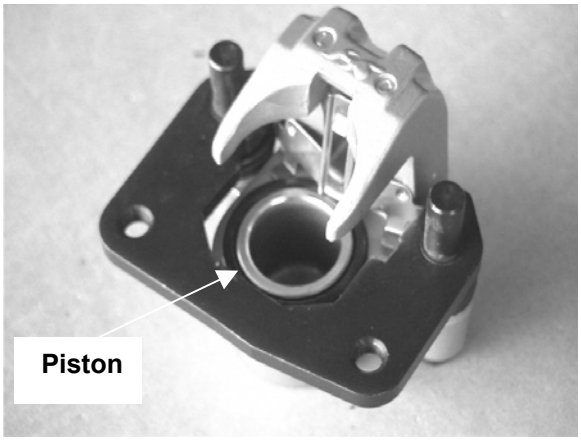
Press the plate to the end



Remove the brake shoe as shown

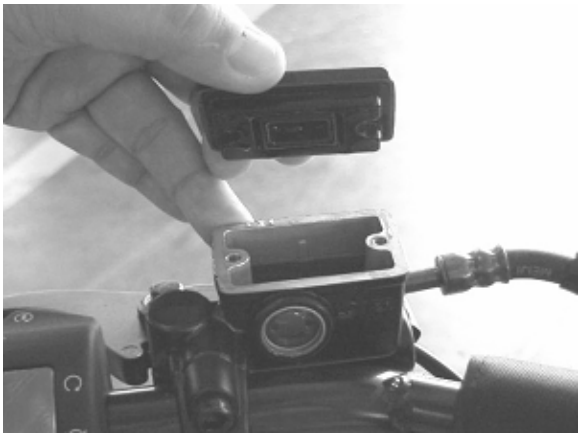
Check the thickness of brake shoe and replace a new one if the thickness less than 1mm.

Press the piston to the end prior to installation of brake shoe

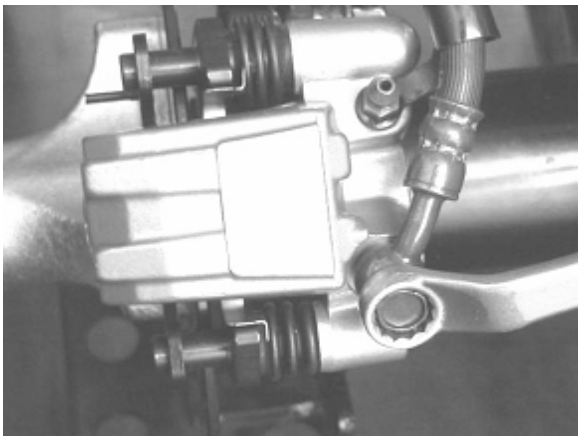


TO REPLACE THE BRAKE HYDRAULIC OIL

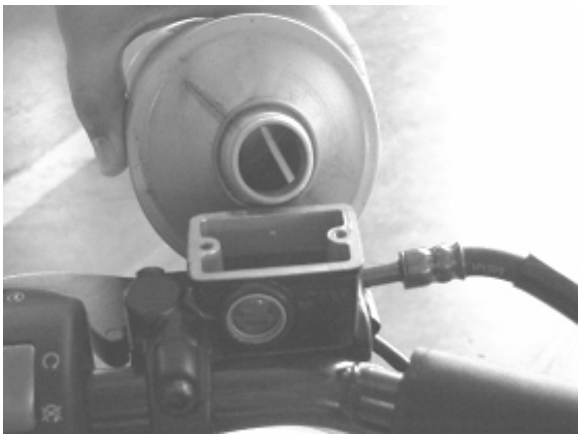
Unscrew the bolts and open the cover.



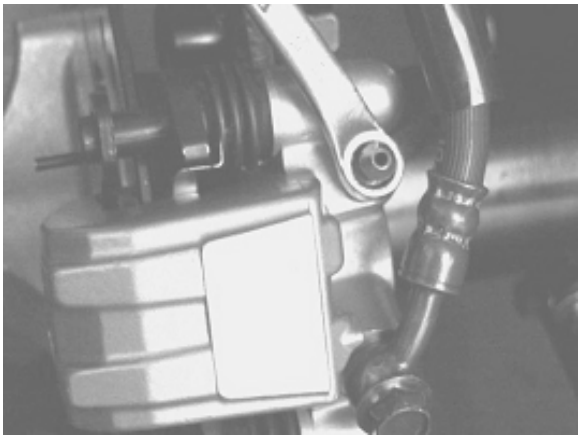
Unscrew the bolt and drain out the used oil drain. Fasten the bolt after the used oil being drained out completely.



Add the brake oil (Dot 3 or Dot 4)
Keep oil level at least half of the cup to avoid air gets into brake system, such like caliper and tube



Unscrew the bolt to vent air from brake system. Fasten the bolt if there isn't any air in the brake system.

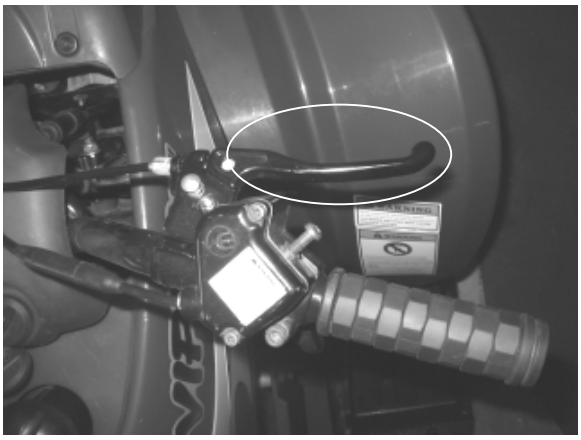


Pull left brake lever slightly to extract air from brake system

Fill the brake oil to the level shown on the cup when no air comes out
Assemble the cover

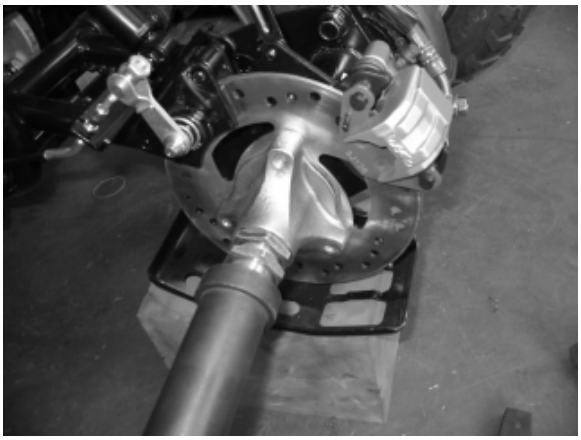
PARKING BRAKE ASSEMBLY- RXL 50R

In RXL 50R, it has a parking brake in the rear brake. It uses another clipper to make brake stopping, and the controller is on handle bar right side. The other types are different.

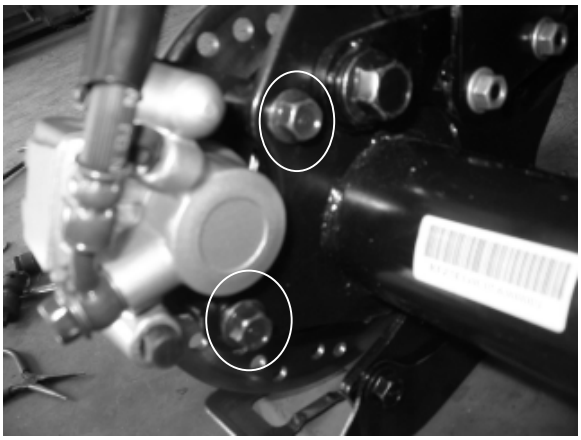


REMOVAL THE PARKING BRAKE SHOE

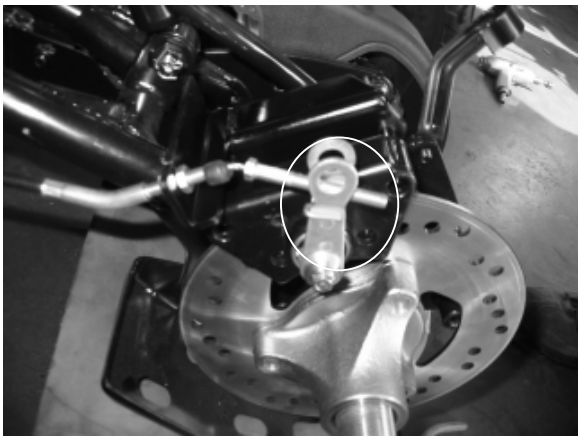
After removing the tire, using the power tool



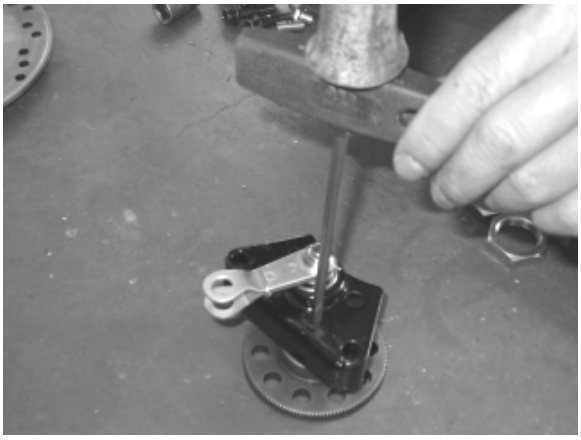
There are two brake caliper fixing bolt on the back of the plate. Use wrench to remove those two bolts, you can take the whole caliper out.



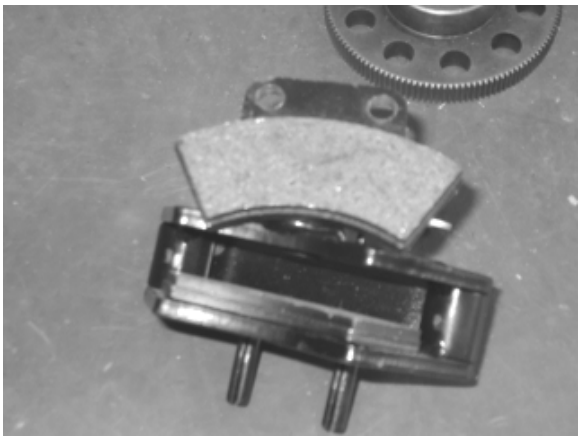
After removing the rear brake caliper, release the brake cable-fixing nut. Then you can take apart the parking brake caliper.



When replace the brake shoes, it must use hammer and punch to impact the pins out. Thus two brake shoes will be separated to maintenance.



After finishing whole repair procedures, to install all parts in reverse steps above.

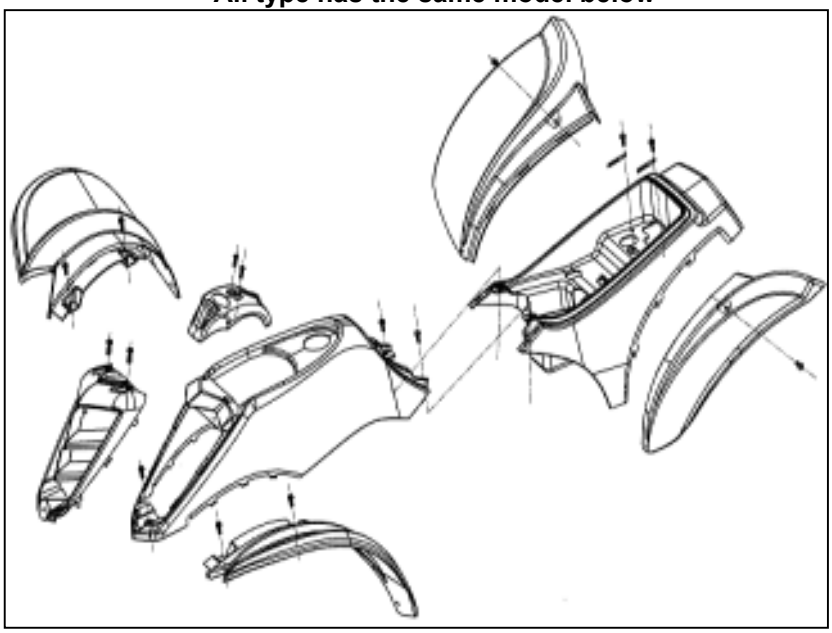


11. FENDERS AND EXHAUST PIPE

11.1 FENDERS DRAWING
11.2 HOW TO REMOVE THE FENDERS
11.3 EXHAUST PIPE DRAWING
11.4 EXHAUST PIPE REMOVE
11.5 EXHAUST PIPE INSTALLATION

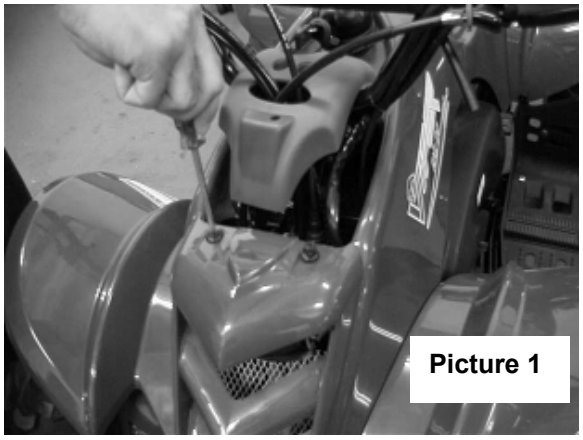
11.1 FENDERS DRAWING

All type has the same model below

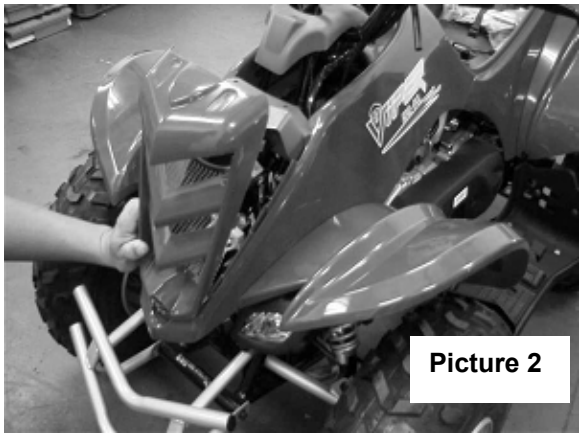


11.2 HOW TO REMOVE THE FENDERS

Unscrew two plastic bolts, you can remove the front body covers as picture 1 & 2.

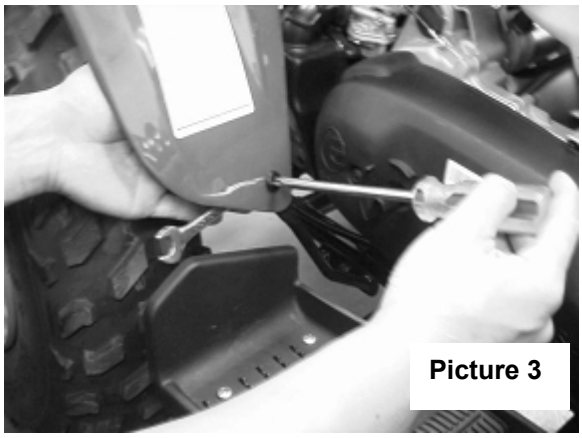


Picture 1

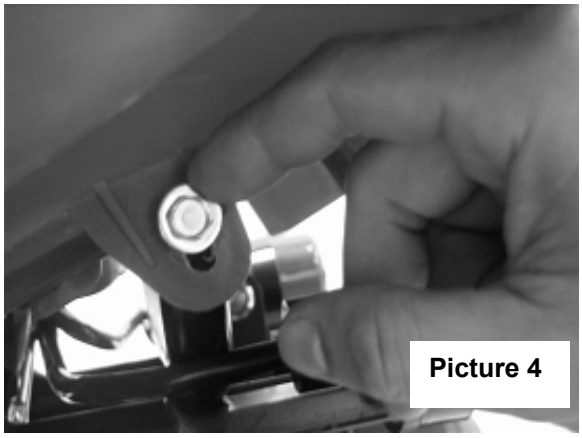


Picture 2

You should remove the seat before removing the front and rear fender.
Unscrew the bolts as pictures 3 & 4 then you can remove the rear R/L fender.



Picture 3

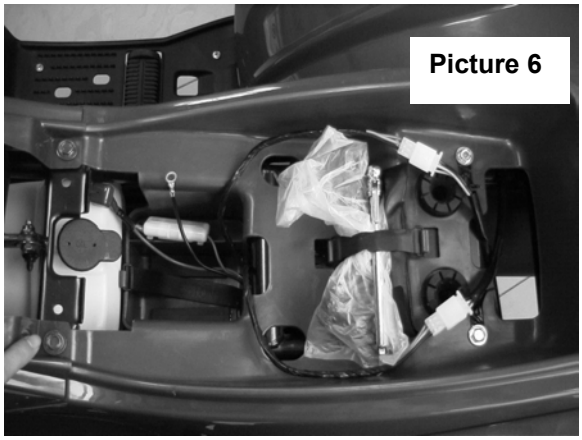


Picture 4

As picture 5 you can remove the rear R/L fender.

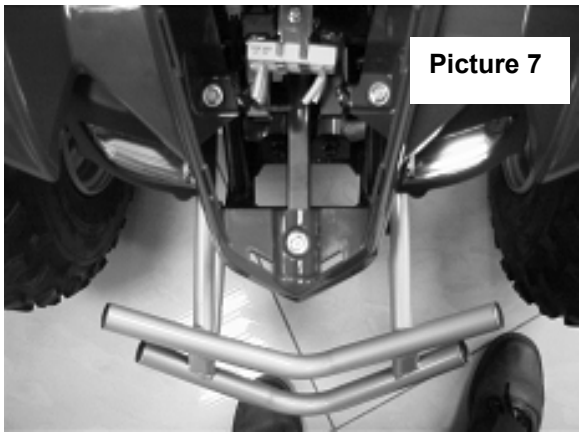
Picture 5

As picture 6 unscrew these four bolts then you can remove the rear body fender.

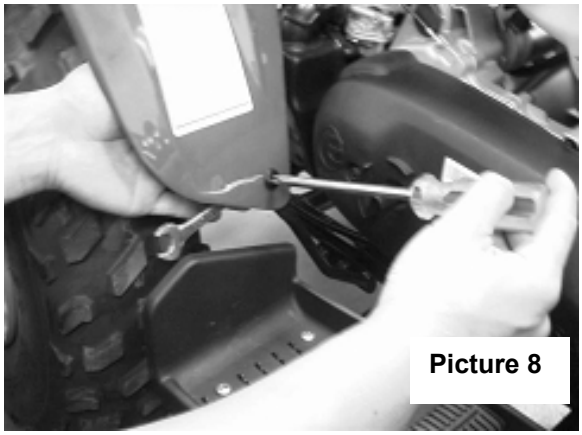


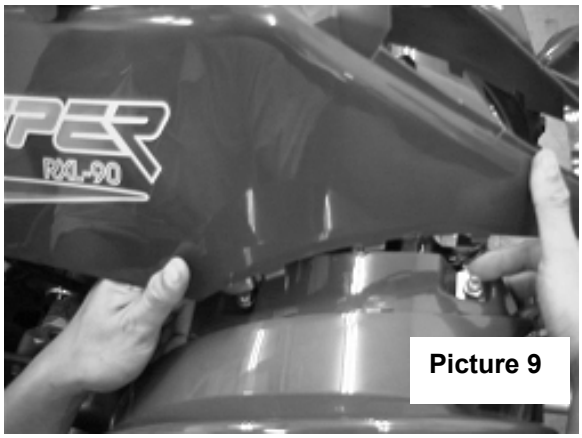
Picture 6

Before remove the front body cover you should remove the handle bar cover firstly. Secondly, you should disassembly the front and rear brake cable and throttle cable, then disassembly the handle bar.
As picture 7 unscrew the bolt then you can remove the front body fender.


Picture 7

As picture 8 & 9 unscrew these three bolts then you can remove the front R/L fender.

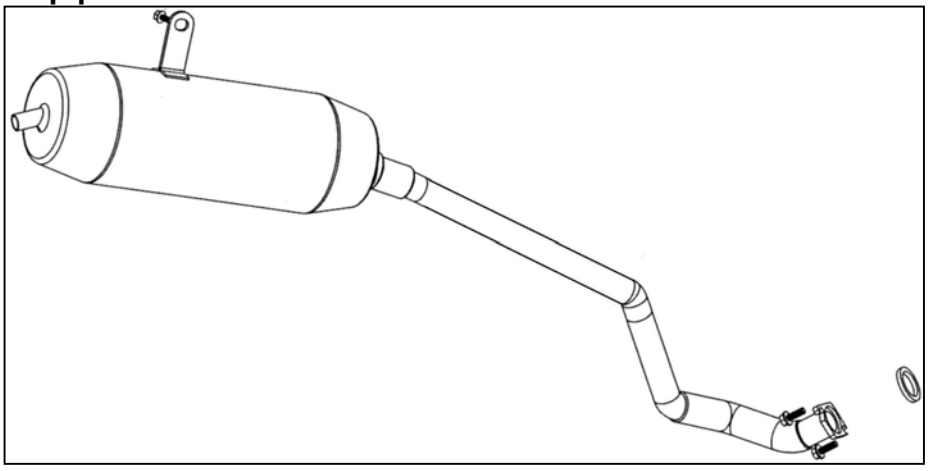

Picture 8



Picture 9

11.3 EXHAUST PIPE DRAWING

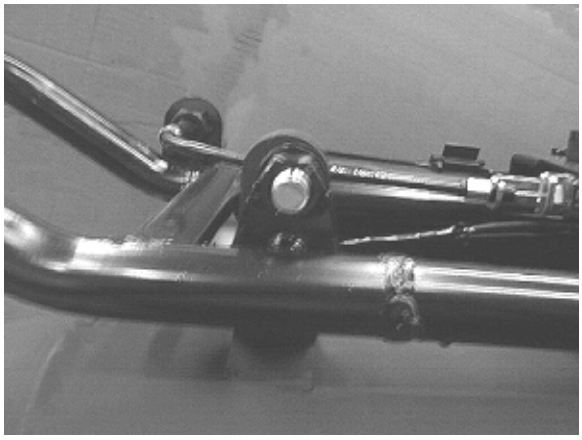
This pipe is for ATV RXL 50/70/90 and RXL 90R and RXL 50M serial



11.4 EXHAUST PIPE REMOVE

Do not service the exhaust pipe while they are hot.
Unscrew the exhaust pipe nuts that fixed with engine.

Remove the exhaust pipe mounting bolts that beside the muffler body.
Remove the exhaust pipe carefully.



11.5 EXHAUST PIPE INSTALLATION

(There are three screw bolts in the vehicle frame. One is on the engine exhaust pipe end, and the other Is on the side of the transmission, another is on the End of vehicle frame.)
Installation is the reverse order of removal.
Torque: Exhaust muffler bolts 30-35 N.m
After installation; make sure that there are no exhaust leaks.

12. ELECTRICAL SYSTEM

12.1 TROUBLESHOOTING
12.2 IGNITION COIL
12.3 BATTERY CAUTION
12.4 BATTERY INSPECTION
12.5 CHARGING
12.6 REMOTE CONTROLLER
12.7 WIRING DIAGRAMS

12.1 TROUBLESHOOTING

ENGINE STARTS BUT STOPS
- ★ IMPROPER IGNITION TIMING
- ★ FAULTY SPARK PLUG

NO SPARK AT PLUG
- ★ ENGINE STOP SWITCH AT " OFF "
- ★ FAULTY IGNITION COIL
- ★ FAULTY GENERATOR
- ★ FAULTY CDI UNIT
- ★ POOLY CONNECTED:
  - Between CDI and ignition coil
  - Between alternator and CDI unit
  - Between CDI and engine stop switch
  - Between ignition coil and spark plug
  - Between generator and CDI unit

ENGINE STARTS BUT RUNS POORLY
- ★ IGNITION PRIMARY CIRCUIT
  - Faulty generator
  - Faulty CDI unit
  - Faulty alternator exciter coil
  - Loosen contacted terminals
  - Faulty ignition coil
- ★ IGNITION SECONDARY CIRCUIT
  - Faulty plug
  - Loosen contacted spark plug wire
- ★ IMPROPER IGNITION TIMING
  - Faulty generator
  - Faulty CDI unit

CHARGING SYSTEM FAILURE
- ★ LOOSE, BROKEN OR SHORTED WIRE
- ★ FAULTY ALTERNATOR
- ★ FAULTY IGNITION SWITCH

ENGINE INTERMITTENT POWER
- ★ LOOSE BATTERY CONNECTION
- ★ LOOSE CHARGING SYSTEM CONNECTION

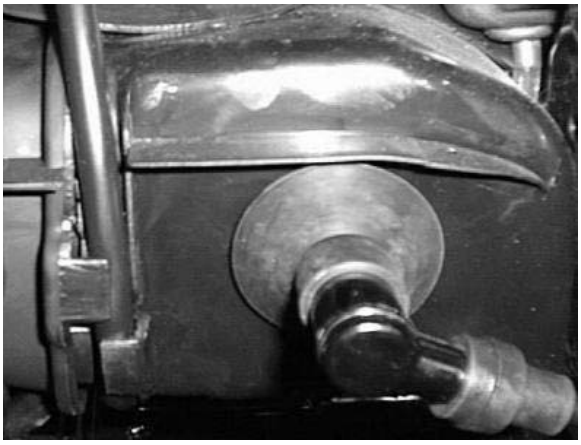
STARTER MOTOR WILL NOT TURN
- ★ DEAD BATTERY
- ★ FAULTY IGNITION SWITCH
- ★ LOOSE OR DISCONNECTED WIRE

STARTER MOTOR AND ENGINE TURN, BUT ENGINE DOES NOT START
- ★ FAULTY IGNITION SYSTEM
- ★ ENGINE PROBLEMS
- ★ FAULTY ENGINE STOP SWITCH

REMOTE CONTROLLER INCAPABLE ACTION TO MAKE ENGINE UNABLE RUNNING
- ★ FAULTY REMOTE CONTROLLER
- ★ SCANTY CONTROLLER BATTERY ELECTRIC

12.2 IGNITION COIL
(ATV RXL 50/90 and KXL 90 and MXL 50 all have the same model in this chapter)

Remove the spark plug cap from the spark plug.
Disconnect the ignition coil primary wire.



Measure the primary coil resistance.
STANDARD: 0.1 - 0.3Ω(20℃)

Measure the secondary coil resistance with the spark plug cap in place.
STANDARD : 7.4 – 12 kΩ(20℃)

IGNITION TIMING

The ignition advance is 15˚± 3˚/4000rpm
The Capacitive Discharge Ignition (CDI) system is factory pre-set and does not require adjustment.

ALTERNATOR EXCITER COIL

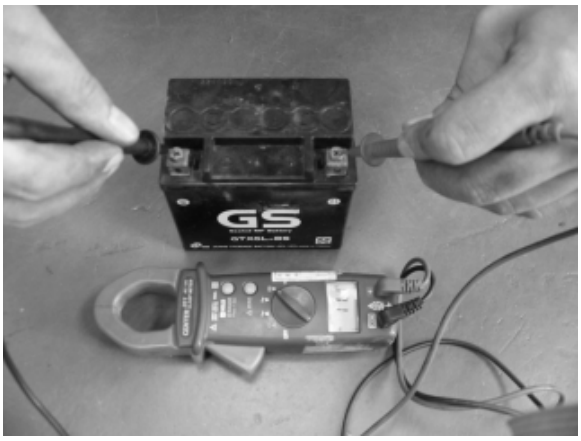
Remove the seat / rear fender and front fender. (see chapter 10)
Disconnect the exciter coil wire.
Measure the resistance between the yellow / red wire and ground.
STANDER : 0.5-0.6Ω (AT 20℃, 68℉)
Measure the resistance between the white wire and ground.
STANDER : 0.48-0.72Ω (AT 20℃, 68℉)
Measure the resistance between the black / red wire and ground.
STANDER : 640-960Ω (AT 20℃, 68℉)
Measure the resistance between the white / red wire and ground.
STANDER : 400-600 or 90-130Ω (AT 20℃, 68℉)

12.3 BATTERY CAUTION

The battery gives off explosive gases; keep sparks, flames and cigarettes away. Provide adequate ventilation when charging or using the battery in an open area. The battery contains sulfuric acid (electrolyte). Contact with skin or eyes may cause severe burns. Wear protective clothing and a face shield. Electrolyte is poisonous. If swallowed drink large quantities of water or milk and call a physician.

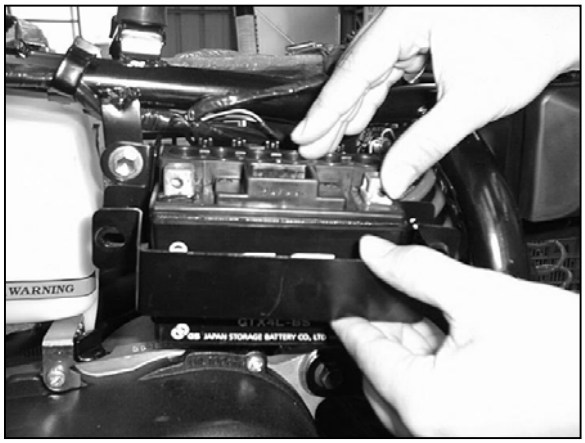
12.4 BATTERY INSPECTION

Battery is under the seat, you can see this battery from the left side.
Measure the battery voltage using a voltmeter.
VOLTAGE: Fully charged: 13.1 V
Undercharged: Below 12.0 V



BATTERY REMOVAL

Remove the battery holder bolt nuts.
Disconnect the negative cable and then the position cable and remove the battery.

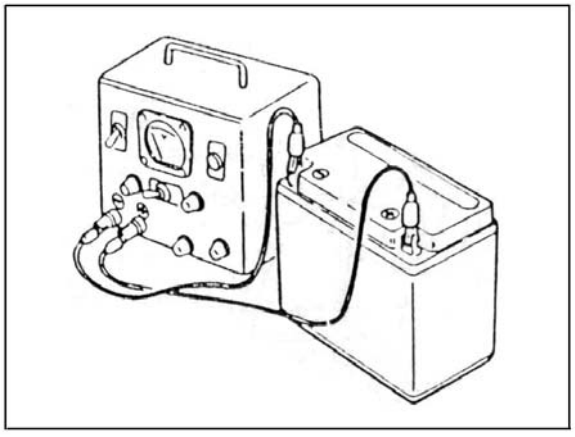


BATTERY INSTALLATION

Install the battery in the reverse order of removal.
After installing the battery, coat the terminals with clean grease.

12.5 CHARGING

Connect the charge positive cable to the battery position terminal.
Connect the charge negative cable to the battery negative terminal.
Using 0.9A-charging current about 5 hours. (Normal charging)
Or using 4A-charging current about 1 hour. (Quick charging)
Keep flames and sparks away from a battery being charged.
Quick charging should be limited to an emergency;
Normal charging is preferred.

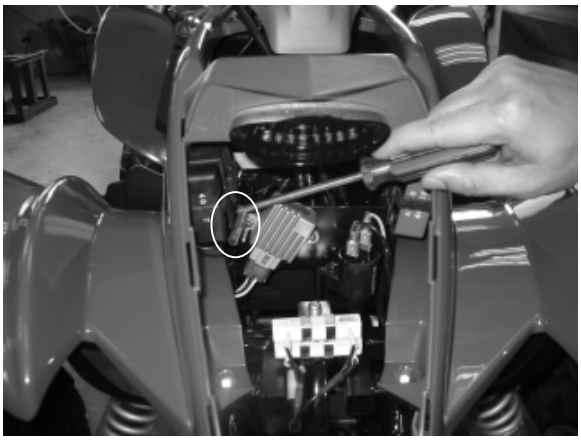


12.6 REMTOTE CONTROLLER

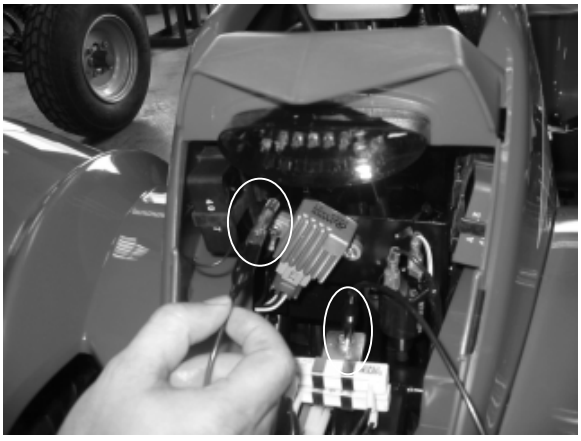
If the remote controller was lost and faulty or its cells empty. You must change cells or buy a new one and follow the steps below to make the controller function correctly. It is also application in ATV that has remote controller.

First turn the switch off and take the front center cover apart.

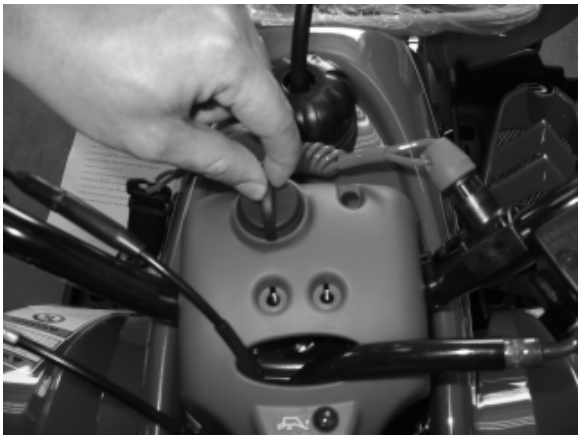
Find out the receiver pin on the right side of front vehicle.



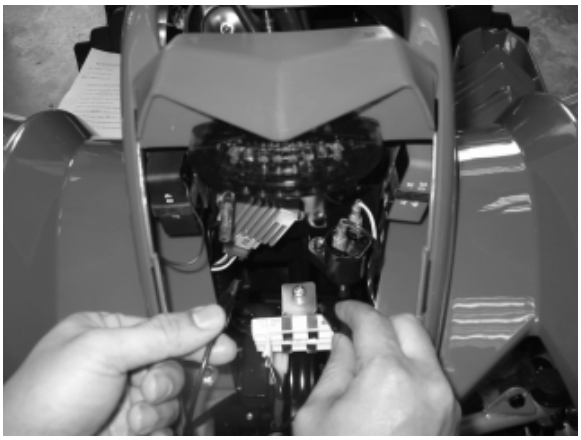
Use the wire clip to connect the receiver pin and vehicle frame ground. After connecting the wire link, you must finish controller adjust frequency in ten seconds.



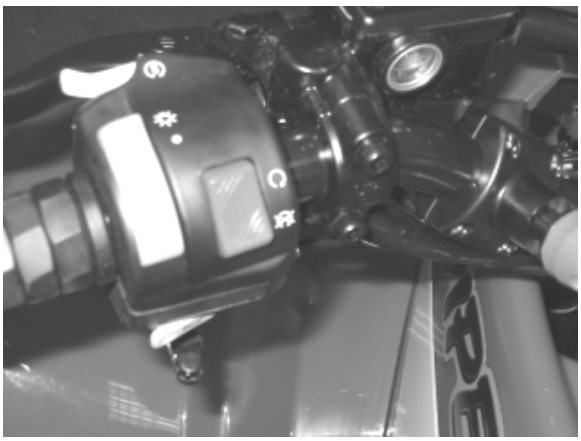
Turn on the switch.



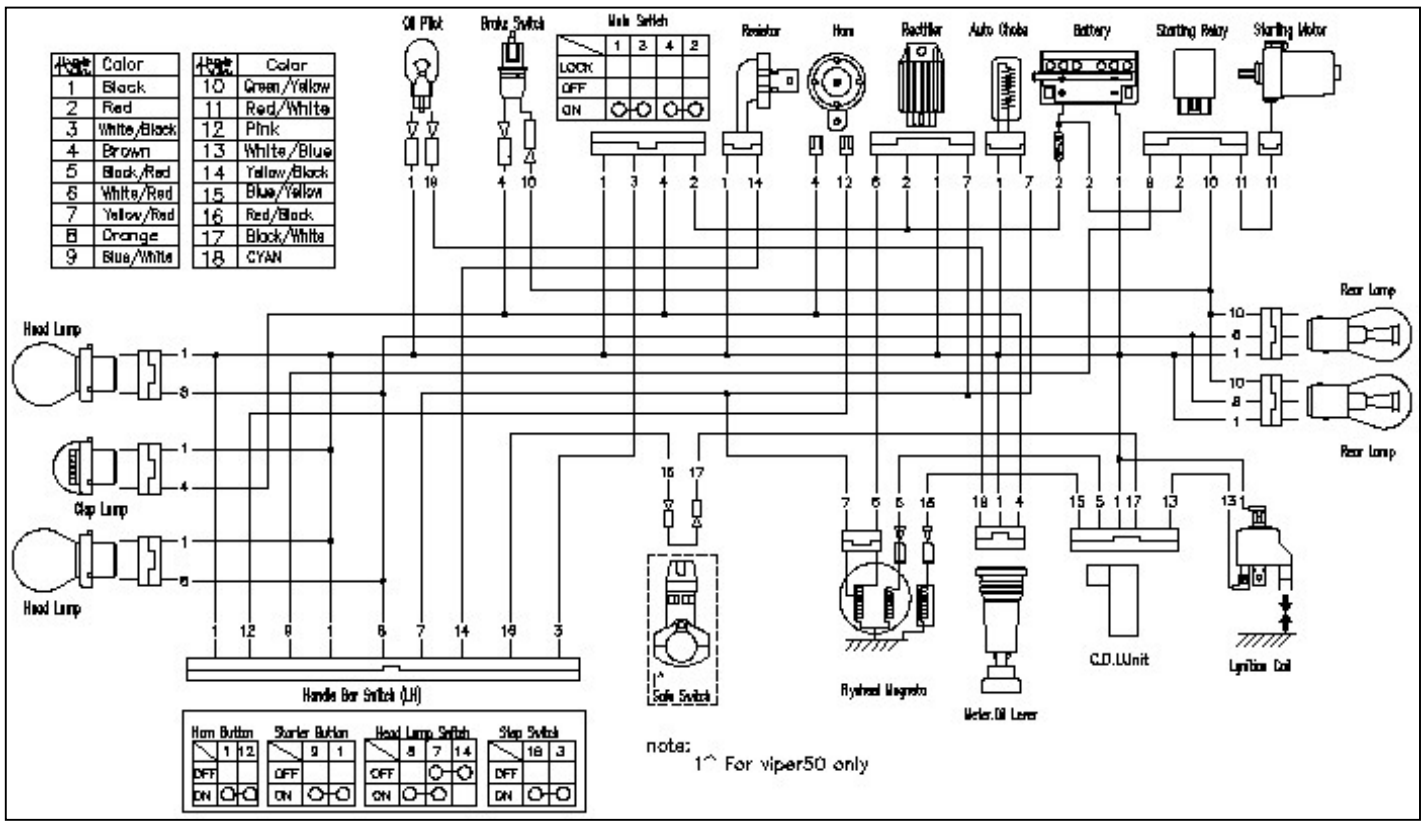
Take a new remote controller and press any button one time for one second to adjust the frequency of controller. Then waiting ten seconds later pull out end of wire clip from receiver pin or frame ground.



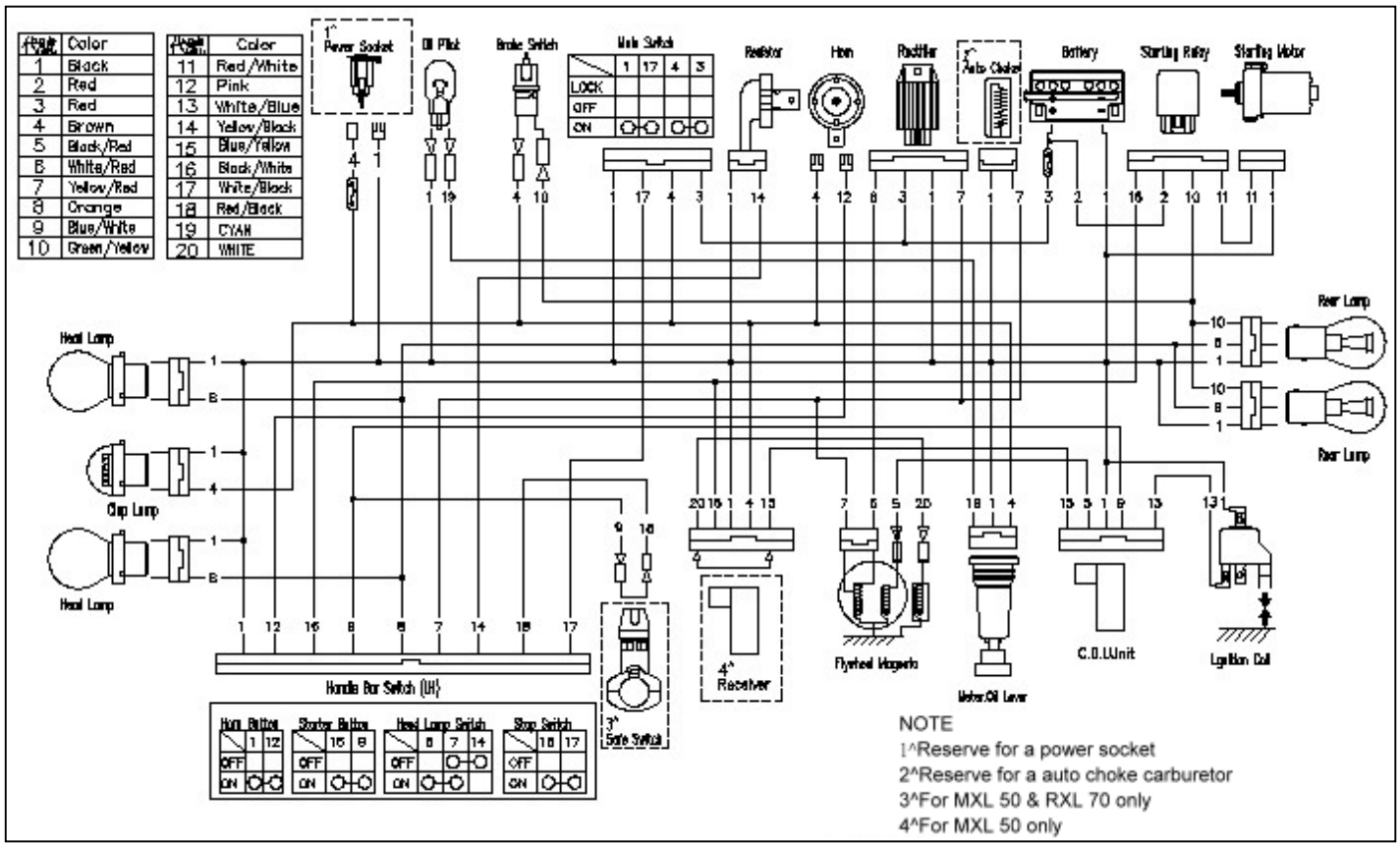
Before testing the remote controller, make sure the engine stop switch on the left handle bar is on position. Then press both buttons of the controller may make the vehicle running normally. If the vehicle engine does not run, please repeat the steps above carefully.



12.7 WIRING DIAGRAMS



The wiring diagram above is for RXL 50 / 90



The wiring diagram above is for RXL 70 / 90 and RXL 50M

代號	Color
1	Black
2	Red
3	Red
4	Brown
5	Black/Red
6	White/Red
7	Yellow/Red
8	Orange
9	Blue/White
10	Cyan/Yellow
11	Red/White
12	Pink
13	White/Blue
14	Yellow/Black
15	Blue/Yellow
32	Black

代號	Color
16	Black/White
17	White/Black
18	Black/Yellow
19	Cyan
20	Purple
21	Yellow
22	White
23	Brown/Yellow
24	Gray
25	Blue/Red
26	Green/White
27	Green/Red
28	Brown/Blue
29	Brown/Black
30	Gray/Red
31	Red/Black

Transmission Selector Switch

	16	20	21	22
F	○	○		
N	○		○	
R	○			○

1^ (Optional) Auxalliary Power Oulet

Brake Switch

Key Ignition Switch

	17	15	4	3
LOCK				
OFF				
ON	○		○	

Horn

Rectifier

2^ (Optional)
Resistor
Electric Choke

12V Battery

Starter Reiay

Starter Motor

16 20 21 22 | 4 1 | 4 10 | 17 15 4 3 | 4 12 | 6 3 1 7 | 1 14 | 1 7 | 3 2 18 1 9 2 21 11 11

Indicator Lamps

Low Oil Lever 19 1

Forward 20 24

Neutral 21 24

Reverse 22 24

Head Lamp 1 8

Grill L.E.D. 1 4

Head Lamp 1 8

24 22 — Back-Up Horn

Brake/Tail Lamp 10 8 1

Brake/Tail Lamp 10 8 1

29 28 — Shifting Motor

26 — Forward
25 — Reverse
30 — Neutral
27 — Shift Drum
Shift Sensors

1 31 — Safety Tether Safety (Optional)

12 1 9 10 8 7 14 31 16 — Handle Bar Switch (LH)

Horn Button	1	12
OFF		
ON	○	○

Starter Button	9	10
OFF		
ON	○	○

Head Light Switch	8	7	14
OFF		○	○
ON	○	○	

EngineStop Switch	31	16
OFF		
ON	○	○

1 19 4 — Oil Level Sending Unit

7 6 5 15 — A/C Generator

17 23 1 4 — 3^ (Optional) Remote Stop Receiver — 32

10 24 20 21 16 22 29 28 | 26 25 30 27 4 5 1 23 13 — C.D.I. Unit

13 18 — Ignition Coil

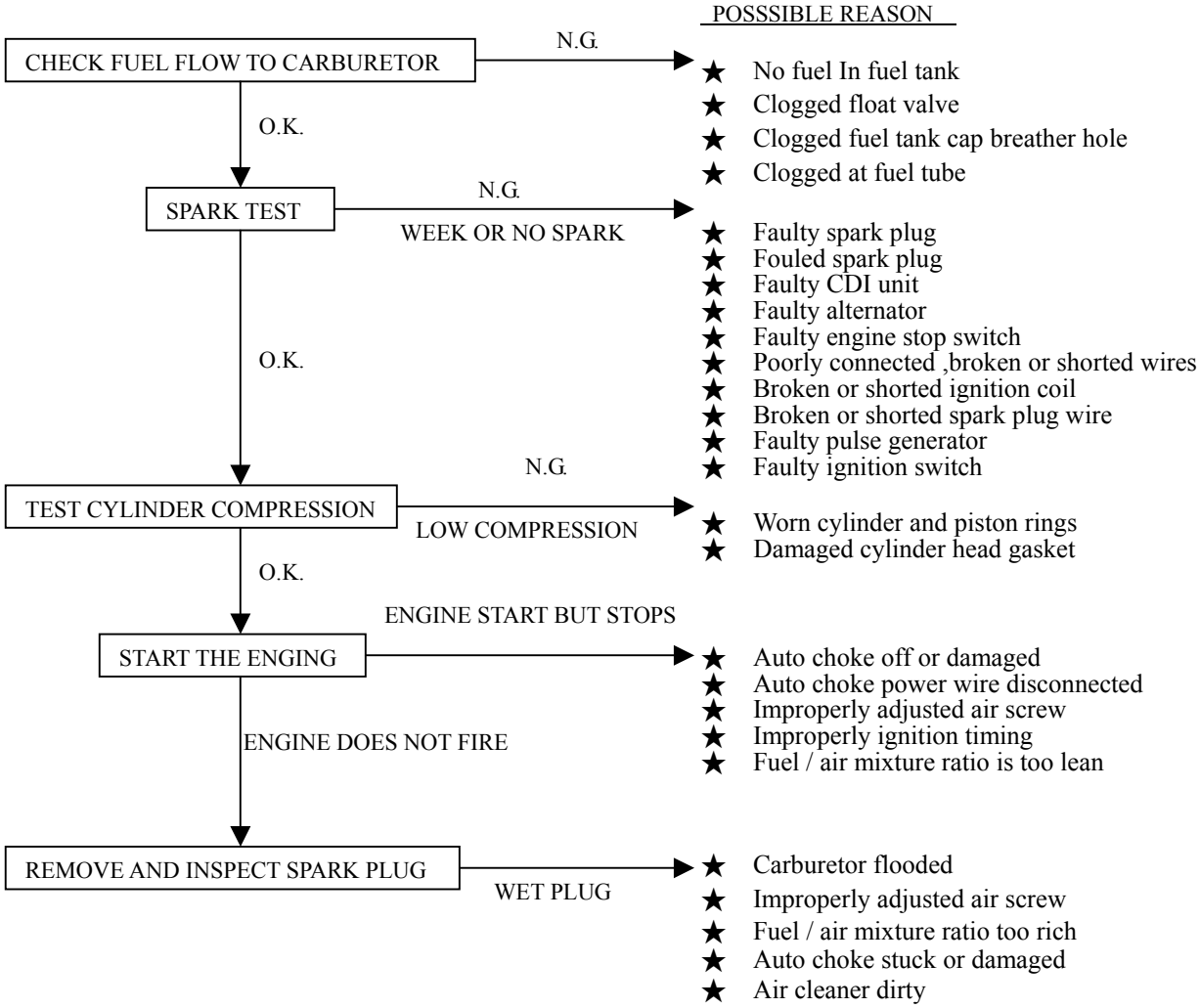
note:
1^ Reserve for a auxalliary power outlet
2^ Reserve for a electric choke carburetor and resistor
3^ Reserve for a remote receiver (stop)

VIPER 90R 2-Takter

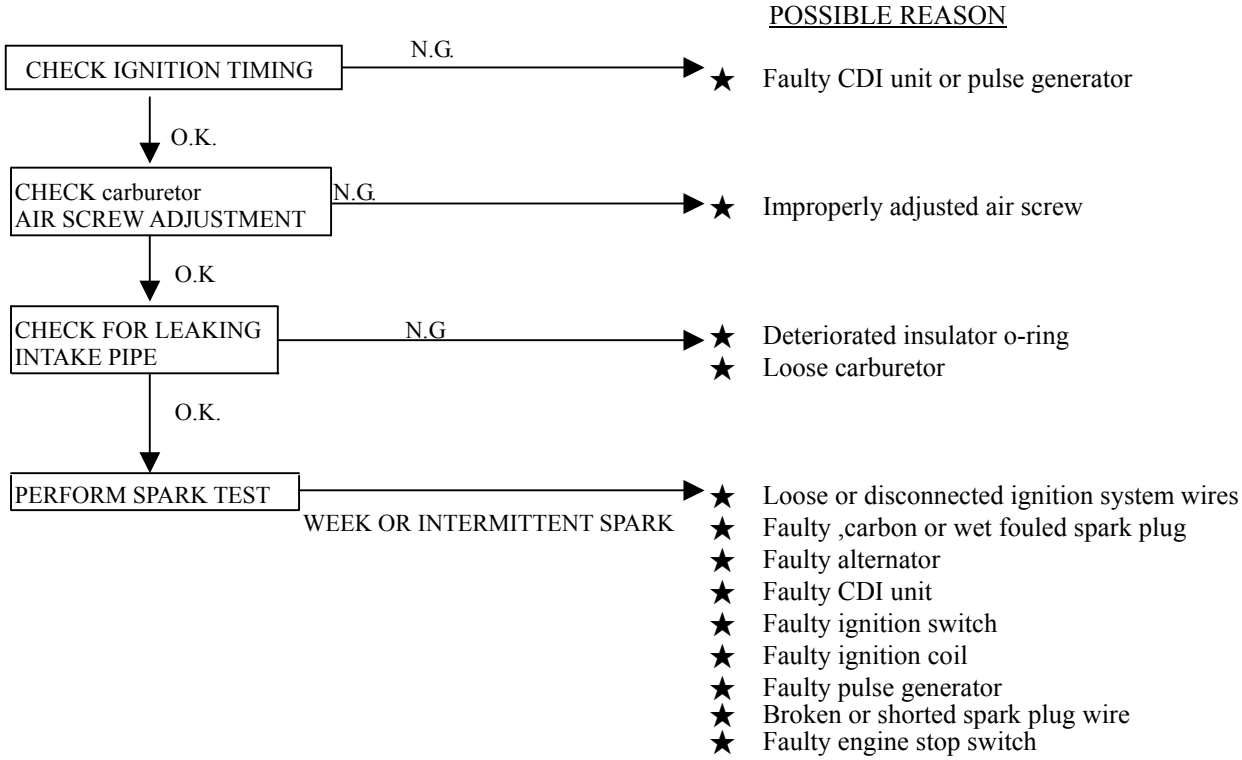
13.TROUBLESHOOTING

13.1 ENGINE DOES NOT START **13.4 LOSS POWER**
13.2 POOR PERFORMANCE AT LOW AND IDLE SPEEDS **13.5 POOR HANDLING**
13.3 POOR PERFORMANCE AT HIGH SPEED

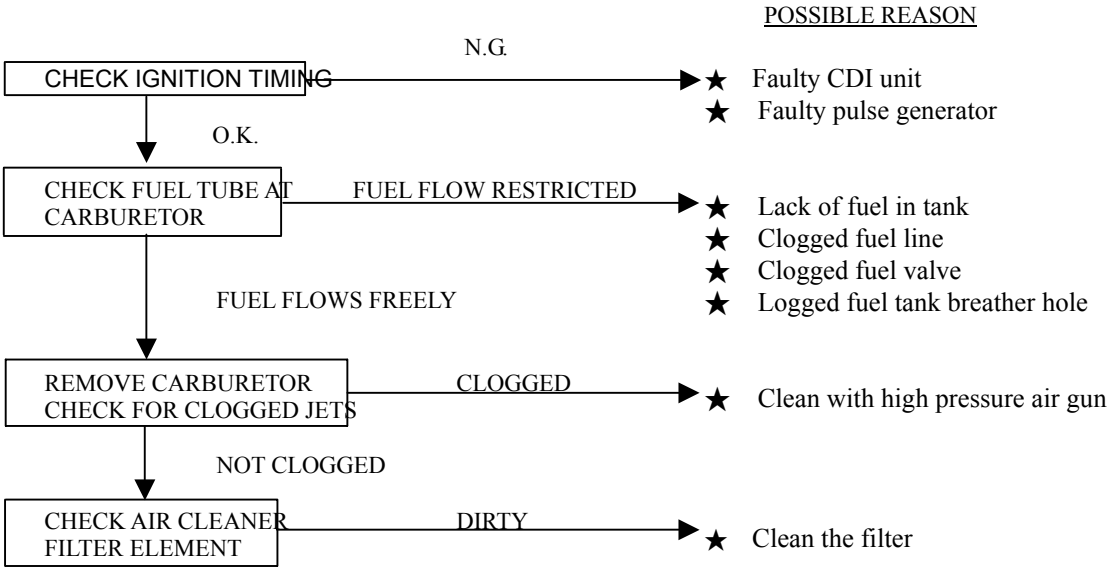
13.1 ENGINE DOES NOT START


POSSSIBLE REASON
CHECK FUEL FLOW TO CARBURETOR
N.G.
★ No fuel In fuel tank
★ Clogged float valve
★ Clogged fuel tank cap breather hole
★ Clogged at fuel tube
O.K.
SPARK TEST
N.G.
WEEK OR NO SPARK
★ Faulty spark plug
★ Fouled spark plug
★ Faulty CDI unit
★ Faulty alternator
★ Faulty engine stop switch
★ Poorly connected ,broken or shorted wires
★ Broken or shorted ignition coil
★ Broken or shorted spark plug wire
★ Faulty pulse generator
★ Faulty ignition switch
O.K.
TEST CYLINDER COMPRESSION
N.G.
LOW COMPRESSION
★ Worn cylinder and piston rings
★ Damaged cylinder head gasket
O.K.
START THE ENGING
ENGINE START BUT STOPS
★ Auto choke off or damaged
★ Auto choke power wire disconnected
★ Improperly adjusted air screw
★ Improperly ignition timing
★ Fuel / air mixture ratio is too lean
ENGINE DOES NOT FIRE
REMOVE AND INSPECT SPARK PLUG
WET PLUG
★ Carburetor flooded
★ Improperly adjusted air screw
★ Fuel / air mixture ratio too rich
★ Auto choke stuck or damaged
★ Air cleaner dirty

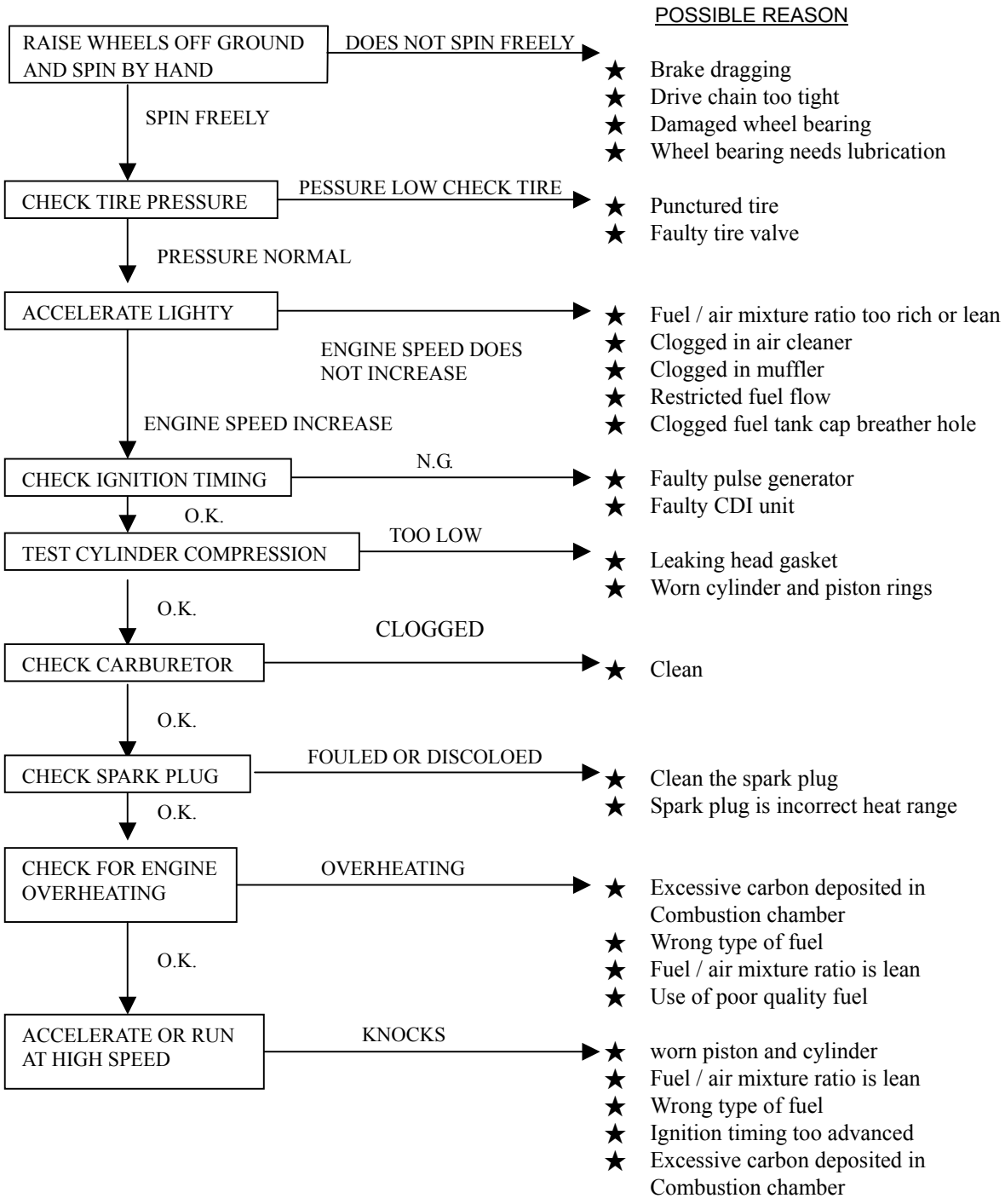
13.2 POOR PERFORMANCE AT LOW AND IDLE SPEEDS



13.3 POOR PERFORMANCE AT HIGH SPEED



13.4 LOSS POWER



13.5 POOR HANDLING